	Α	В	С	D	T E	F	G	Т	T i	J
1		LL		missions Calculations		L	L	L	L	
2			• •	Summary of Emissions						
2				•						
3										
4		C	ompany Name:	MGPI of Indiana, LLC						
5			Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025						
	Cinnificant	Carres Ma								
6	Significant	Source Mo	diffication No.:	0296-35496-00005						
7	Significant	Permit Mo	dification No.:	029-35505-00005						
8			Reviewer:	Kristen Willoughby						
9			Data	: 12/22/14						
			Date.	12/22/14						
10				Potential to Emit Poforo Controls (ton)url						
	Significant Emission Units	PM	PM10	Potential to Emit Before Controls (ton\yr) PM2.5	SO2	NOx	VOC	СО	GHG	Total HAPs
12 13	Significant Emission Offics	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
14	One (1) pneumatic conveyor, identified as EU-11	189.22	189.22	16.08	-	-	-	-	-	-
	One (1) corn receiving and storage system, identified as				_	_	_	_	_	_
15	EU-12 (Stack S-111)	225.26	225.26	19.15						
16	One (1) grain transport system, identified as EU-12 (Stack S-112)	20.33	20.33	1.73	-	-	-	-	-	~
10	(Stack O TTZ)									
17	Seven (7) storage bins, collectively identified as EU-13	20.33	20.33	1.73	-	-	-	-	-	-
18	Six (6) hammermills, collectively identified as EU-14	90.10	90.10	7.66	-	-	-	_	_	-
10	······································	30.10	30.10	1.00			7.01			
19	EU-21, which consists of fourteen (14) open fermenters	-	-	-	-	-	7.81	-	-	0.04
20	DDGS Storage (EU-34)	29.76	29.76	2.53	-	-	-			-
21	DDGS Rail/Truck Loadout (EU-35/EU-36)	27.18	27.18	2.31	-	-	-	-	-	~
22	DDGS Rail/Truck Loader(EU-37/EU-38) Twenty-four (24) closed fermenters, collectively	0.27	0.27	0.05	-	-	-	-	-	-
23	identified as EU-22	-	-	-	-	-	57.79	-	-	0.26
		_	_	_	<u> </u>	_	12.51	_	_	_
24	Two (2) beer wells, identified as EU-23 and EU-24	_	-	-	_			_		0.405.00
25	Distillation (EU-20 and EU-25 through EU-29) Four (4) paddle screens, identified as EU-31 and three	-	-	-	-	-	0.09	-	-	3.43E-03
26	(3) conveyors, identified as EU-33	-	-	-	-	-	440.00	-	-	2.00
		201.04	201.04	201.04	_	_	893.43	_	_	69.90
27	Five (5) rotary dryers, collectively identified as EU-32	201.04	201.07	201.04	_	_	555.75	_	_	00.00
28	One (1) cooler, and one (1) transport system, collectively identified as EU-32	61.22	46.01	8.12	-	-	9.16	-	-	1.28
29	One (1) DDG Dryer, identified as EU-39	418.77	418.77	418.77	18.84	27.86	418.77	464.28	27,473	39.36
30	Wet Pad, identified as EU-40	-	_	-	-	-	See Note	_	-	See Note
31	One (1) wine room, identified as EU-41	-	-	-	-	-	19.52	-	-	-
32	One (1) tank farm, identified as EU-42	-	-	-	-	-	19.01	-	-	-
33 34	EU-43, which consists of Building 88 One (1) mini-tank farm, identified as EU-45	-	-	-	-	-	4.69 3.59	-	-	<u>-</u>
34	One (1) mini-tank farm, identified as EO-45 One (1) barrel and emptying operation, identified as	-		-	-	-	3.58	<u>-</u>	<u>-</u>	-
35	EU-61	-	-	-	-	-	12.01	-	-	-
	Six (6) warehouses, identified as EU-71 through EU-	_	_	_	_	_		_	_	_
36	76		-	-			1867.41	-		
37	One (1) steam boiler, identified as EU-96	1.99	7.96	7.96	0.63	293.37	5.76	88.01	126,479	1.98
38	One (1) steam boiler, identified as EU-97 (worst case fuel)	2.85	3.28	2.21	60.77	28.53	1.12	17.17	31,926	0.39
39	One (1) loading rack, identified as EU-46		-	-		-	6.69		31,820	0.05
40	Subtotal Significant Emission Unit	1288.34	1279.53	689.34	80.25	349.76	3779	569.46	185878	115.2
41	Fugitive Emissions	-	-	-	-	-	128.2	-		0.90
42	Emergency Generator-Diesel	0.28	0.16	0.16	1.62	9.60	0.28	2.20	462	4.41E-03
43	Emergency Generator-Natural gas	1.16E-03	1.46E-03	1.46E-03	1.78E-05	0.10	3.63E-03	0.01	4.29	2.38E-03
44 45	FW Pump-Diesel	0.13	0.13 0.29	0.13 0.29	0.12	1.82 11.5	0.15 0.43	0.39 2.60	67.79 533.65	1.59E-03
45	Subtotal Insignificant Activities Total	0.41 1288.75	1279.82	689.63	1.74 81.99	361.28	3908	572.07	186412	8.38E-03 116.15
47				rom the DDGS production is the worst case scenario. To		<u> </u>	1 3300	U	100712	110.10
48	of the wet cake storage is not included in the PTE									
		·····								

	A	В	С	D	E	F	G	Ι н	T i	J
49				missions Calculations	<u> </u>			L		
50			••	Summary of Emissions						
51										
		C	amaany Nama	MGPI of Indiana, LLC						
52		C		•						
53				7 Ridge Avenue, Lawrenceburg, Indiana 47025						
54	•			0296-35496-00005						
55	Significant	Permit Mo		029-35505-00005						
56			Reviewer:	Kristen Willoughby						
57			Date	: 12/22/2014						
58										
59				Potential to Emit After Control (ton\yr)						
60	Significant Emission Units	PM	PM10	PM2.5	SO2	NOx	VOC	co	GHG	Total HAPs
61		(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
62	One (1) pneumatic conveyor, identified as EU-11	1.89	1.89	0.32	-	-	-	-	-	-
63	One (1) corn receiving and storage system, identified as EU-12 (Stack S-111)	2.25	2.25	0.38	_	_	_	_	_	_
03	One (1) grain transport system, identified as EU-12	2.20	2.25	0.00	_	_	_	_	_	
64	(Stack S-112)	0.20	0.20	0.03	_	-	-	-	-	-
65	Seven (7) storage bins, collectively identified as EU-13	0.20	0.20	0.03	-			-	-	-
66	Siv (6) hammarmille collectively identified as 51144	0.90	0.90	0.15						
00	Six (6) hammermills, collectively identified as EU-14	0.80	0.80	0.10	-	-	_	<u> </u>	-	-
67	EU-21, which consists of fourteen (14) open fermenters	_	_	-	_	-	7.81	-	-	0.04
68	DDGS Storage (EU-34)	0.30	0.30	0.05	-	-	-	-	-	-
69	DDGS Rail/Truck Loadout (EU-35/EU-36)	0.27	0.27	0.05	-	-	-	_	_	-
70	DDGS Rail/Truck Loader(EU-37/EU-38)	0.27	0.27	0.05		-		-	-	300
	Twenty-four (24) closed fermenters, collectively									
71	identified as EU-22	-	_	-	-	-	57.79	-	-	0.26
72	Two (2) beer wells, identified as EU-23 and EU-24	_				_	12.51		_	
73	Distillation (EU-20 and EU-25 through EU-29)	_		-			0.09			3.43E-03
/ 5	Four (4) paddle screens, identified as EU-31 and three						0.00			0.402 00
74	(3) conveyors, identified as EU-33	-	-	-	-	-	440.00	-	-	2.00
75	Five (5) rotary dryers, collectively identified as EU-32	30.16	30.16	30.16	-	-	893.43	-	-	69.90
76	One (1) cooler, and one (1) transport system, collectively identified as EU-32	5.74	3.80	1.81			9.16			1.28
77	One (1) DDG Dryer, identified as EU-39	8.38	8.38	8.38	18.84	27.86	8.38	46.43	27,473	1.18
78	Wet Pad, identified as EU-40			-	-	-	See Note	-	-	- 1.10
79	One (1) wine room, identified as EU-41	-	_	-	-	-	19.52	_	-	
80	One (1) tank farm, identified as EU-42	-	-	-	-	-	19.01	-	-	-
81	EU-43, which consists of Building 88	-	-	-	-	-	4.69		-	
82	One (1) mini-tank farm, identified as EU-45	-	-	-	-	-	3.59	-	-	-
	One (1) barrel and emptying operation, identified as									
83	EU-61	-	-	-	-	-	12.01	-	-	-
0.4	Six (6) warehouses, identified as EU-71 through EU-						1007			
84 85	76 One (1) steam boiler, identified as EU-96	1.99	7.96	7.96	0.63	293.37	1867 5.76	- 88.01	126,479	1.98
03	One (1) steam boiler, identified as EU-96 One (1) steam boiler, identified as EU-97 (worst	1.88	08.1	08.1	0.03	283.31	3.10	00.01	120,4/9	1.80
86	case fuel)	2.85	3.28	2.21	60.77	28.53	1.12	17.17	31,926	0.39
87	One (1) loading rack, identified as EU-46	00		- La. La. 1	-	-	6.69	~	01,020	0.05
88	Subtotal Significant Emission Unit	55.41	59.87	51.58	80.25	349.76	3,369	151.61	185,878	77.07
89	Fugitive Emissions	w.	m	~	•	M	128.2	10		0.90
90	Emergency Generator-Diesel	0.28	0.16	0.16	1.62	9.60	0.28	2.20	462	4.41E-03
91	Emergency Generator-Natural gas	1.16E-03	1.46E-03	1.46E-03	1.78E-05	0.10	3.63E-03	0.01	4.29	2.38E-03
92	FW Pump-Diesel	0.13	0.13	0.13	0.12	1.82	0.15	0.39	67.8	1.59E-03
93	Subtotal Insignificant Activities	0.41	0.29	0.29	1.74	11.52	0.43	2.60	534	8.38E-03
94	Total	55.82	60.16	51.87	81.99	361.28	3,498	154.21	186,412	77.97
				from the DDGS production is the worst case scenario. Th	eretore, the	PIE				
96	of the wet cake storage is not included in the PTE	ioi irie eniire	s source.		***************************************			***********		

	Α	В	С	D	E	F	G	Тн	<u> </u>	l j
97			l	ssions Calculations		<u> </u>		<u> </u>	<u> </u>	<u> </u>
98			• •	Summary of Emissions						
99				•						
		_								
100		C	• •	MGPI of Indiana, LLC						
101			Address: 7	Ridge Avenue, Lawrenceburg, Indiana 47025						
102	Significant	Source Mo	dification No.: 0	296-35496-00005						
103	Significan	t Permit Mo	dification No.: 0	29-35505-00005						
104			Reviewer: K	Kristen Willoughby						
105				2/22/2014						
106										
107			Potential to E	mit After Issuance of Permit (Limited PTE) (ton\yr)						
108	Significant Emission Units	PM	PM10	PM2.5	SO2	NOx	VOC	СО	GHG	Total HAPs
109	_	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
110	One (1) pneumatic conveyor, identified as EU-11	189.22	189.22	16.08	-	-	-	_	-	-
	One (1) corn receiving and storage system, identified as									
111	EU-12 (Stack S-111)	5.26	5.26	19.15	-	-	-	-	-	-
112	One (1) grain transport system, identified as EU-12	0.96	0.96	1.73						
114	(Stack S-112)	0.80	U.90	1.10	-	-		-	-	-
1113	Seven (7) storage bins, collectively identified as EU-13	20.33	20.33	1.73	-	-	_	_	_	_
	(1) 100000000000000000000000000000000000									
114	Six (6) hammermills, collectively identified as EU-14	90.1	90.1	7.66	-	-	-	_		
	EU-21, which consists of fourteen (14) open fermenters	-	-	~		-	7.81	na na	~	0.04
116	DDGS Storage (EU-34)	0.60	0.60	2.53	-	-	-	-	-	-
117	DDGS Rail/Truck Loadout (EU-35/EU-36)	1.27	1.27	2.31	-	-	-	-	-	-
118	DDGS Rail/Truck Loader(EU-37/EU-38)	5.48	5.48	0.05	-	-	-	_	-	-
110	Twenty-four (24) closed fermenters, collectively						F7 70			0.00
119	identified as EU-22	-	-	-	-	-	57.79	-	-	0.26
120	Two (2) beer wells, identified as EU-23 and EU-24	_	_	<u>-</u>	_	_	12.51		_	_
121	Distillation (EU-20 and EU-25 through EU-29)	-	-	-		_	0.09	_		0.00
121	Four (4) paddle screens, identified as EU-31 and three						0.00			0.00
122	(3) conveyors, identified as EU-33	-	-	-	-	-	440.00	_	-	2.00
	· · · · · · · · · · · · · · · · · · ·									
123		19.85	19.85	19.85	-	-	893.43	-	-	69.90
	One (1) cooler, and one (1) transport system,									
124	collectively identified as EU-32	7.91	5.01	2.01	-	-	9.16	-	-	1.28
125	One (1) DDG Dryer, identified as EU-39	8.4	8.4	8.4	18.84	27.86	8.38	46.43	27,473	20.30
126	Wet Pad, identified as EU-40	-	-	-	-	-	See Note	-	-	-
127	One (1) wine room, identified as EU-41	-	-	-	-	-	19.52	-	-	-
128	One (1) tank farm, identified as EU-42	-	-	-	-	-	19.01	-	-	-
129	EU-43, which consists of Building 88	-	-	-	-	-	4.69	-	-	-
130	One (1) mini-tank farm, identified as EU-45	-	-	-	-	-	3.59	-	-	-
121	One (1) barrel and emptying operation, identified as						12.04			
131	EU-61 Six (6) warehouses, identified as EU-71 through EU-	-	-	-		-	12.01	-	-	-
132	76			_	_		1,867			
133	One (1) steam boiler, identified as EU-96	1.99	7.96	7.96	0.63	293.4	5.76	88.0	126,479	1.98
133	One (1) steam boiler, identified as EU-97 (worst	1.55	1.30	1.50	0.00	233.4	3.10	30.0	120,418	1.50
134	case fuel)	1.98	2.65	1.96	39.77	25.38	0.56	10.42	56,600	0.40
134 135	One (1) loading rack, identified as EU-46	1.00	£.00	-	-		6.69	- 10.74	- 50,000	0.40
136	Subtotal Significant Emission Unit	353.31	357.04	91.39	59.25	346.61	3,368	144.86	210,552	96.20
137	Fugitive Emissions			* * * * * * * * * * * * * * * * * * * *		- 10.01	128.23			0.90
138	Emergency Generator-Diesel	0.28	0.16	0.16	1.62	9.60	0.28	2.20	462	4.41E-03
139	Emergency Generator-Natural gas	1.16E-03	1.46E-03	1.46E-03	1.78E-05	0.10	3.63E-03	0.01	4.29	2.38E-03
140	FW Pump-Diesel	0.13	0.13	0.13	0.12	1.82	0.15	0.39	67.8	1.59E-03
141	Subtotal Insignificant Activities	0.41	0.29	0.29	1.74	11.5	0.43	2.60	534	8.38E-03
142	Total	353.72	357.33	91.68	60.99	358.13	3,497	147.46	211,085	
				m the DDGS production is the worst case scenario. The			- , ,	1	1	
144	· · · · · · · · · · · · · · · · · · ·			,	, · -					

	A	В	С	D	E	F	G
1 2							Summary of HAP Emissions
2 3 4 5 6 7 8 9							Company Name: Address: Significant Source Modification No.: Significant Permit Modification No.: Reviewer: Date
1	Significant Emission Units	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead
2		ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr
3					de anno consecuent de la consecuent de l	Anno contra cont	
4	One (1) pneumatic conveyor, identified as EU-11	_	_	-	_	-	-
5	One (1) corn receiving and storage system, identified as EU-12	_	_	_	-	-	-
5	Seven (7) storage bins, collectively identified as EU-13	_	_	_	_	_	-
7	Six (6) hammermills, collectively identified as EU-14	-	_	-	_	-	-
8	EU-21, which consists of fourteen (14) open fermenters	-	_	1.04E-03	_	_	-
9	Silos, surge hopper, and transport system: EU-34 through EU-36	_	_	-	-	-	-
)	Twenty-four (24) closed fermenters, collectively identified as EU-22	-	_	7.69E-03	_	-	-
1	Two (2) beer wells, identified as EU-23 and EU-24	_	_	_	-	-	-
2	Distillation (EU-20 and EU-25 through EU-29)	_	_	2.04E-04	-	-	-
3	Four (4) paddle screens, identified as EU-31 and three (3) conveyors, identified as EU-33	_	_	5.84E-02	-	-	-
4	Five (5) rotary dryers, collectively identified as EU-32	-	_	0.32	-	_	-
5	One (1) cooler, and one (1) transport system, collectively identified as EU-32	-	-	0.43	-	_	-
5	One (1) DDG Dryer, identified as EU-39	4.78E-04	2.73E-04	12.98	0.41	7.74E-04	1.14E-04
7	Wet Pad, identified as EU-40				T		
8	One (1) rail car loader and one (1) truck loader, identified as EU-37 and EU-38	_		_	-	_	<u>-</u>
	One (1) wine room, identified as EU-41	_	-	_		-	_
)	One (1) tank farm, identified as EU-42				-	_	-
2	EU-43, which consists of Building 88 One (1) mini-tank farm, identified as EU-45	-			-	_	_
	One (1) barrel and emptying operation, identified as EU-61	-		-	***	-	
3	Six (6) warehouses, identified as EU-71 through EU-76	-					
5	One (1) steam boiler, identified as EU-96	2.20E-03	1.26E-03	0.08	1.89	3.56E-03	- 5.24E-04
5	One (1) steam boiler, identified as EU-97 (worst case fuel)	4.29E-04	2.45E-04	0.02	0.37	6.95E-04	1.80E-03
7	One (1) loading rack, identified as EU-46	4.23L-04	2.436-04	6.69E-03			-
3	Fugitive Emissions	-	-	0.13		_	_
	Subtotal Significant Emission Unit	3.11E-03	1.78E-03	14.02	2.66	5.03E-03	2.44E-03
	Emergency Generator-Diesel	2.17E-03	_	2.21E-04	-	7.87E-04	-
	Emergency Generator-Natural gas	5.87E-05	-	1.67E-03	1.35E-05	-	-
2	FW Pump-Diesel	3.84E-04	-	4.85E-04	-	1.68E-04	-
3	Subtotal Insignificant Activities	2.62E-03	0.00E+00	2.38E-03	1.35E-05	 	0.00E+00
4	Total	5.72E-03	1.78E-03	14.03	2.66	5.99E-03	2.44E-03

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1	Appendix A: Emissions Calculations											
2												
3												
4	MGPI of Indiana, LLC											
5	7 Ridge Avenue, Lawrenceburg, Indiana 47025											
6	0296-35496-00005											
	029-35505-00005											
	Kristen Willoughby											
	12/22/2014											
10	Cadmium	Chromium	Manganese	Nickel	Acetaldehyde	Propionaldehyde	Methanol	Acrolein	PAH	1,3-Butadiene	Xylene	Total HAP
11 12	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr
13	Connyi	COTITY	1 CO11/ y 1	1 (011/y)	COTO Y	1 COTTY Y I	COTITY	COTT	tonyi	comy	tornyr	l comy
14	-	-	-	-	-		-	-	-		-	0.00
15	<u>-</u>	_	_	_	-	-	_	_	_	_	-	0.00
16	-	-		-	-	-	-	-	-	•	-	0.00
17	-	-	-		-	_	-	-	-	-	-	0.00
18	-	_	-	_	0.03	2.09E-03	1.04E-03	-	_	-	-	0.04
19	-	-	-	_	-	-	-	_	_	-	_	0.00
20	-	-	-	-	0.23	1.54E-02	7.69E-03	_	-	-	-	0.26
21	-	-	-	_	-	-	_		-	-	_	0.00
22	-	-	-	-	2.81E-03	2.04E-04	2.04E-04	-	-	-	_	3.43E-03
23	-	-	-	_	1.77	0.12	0.06		-	-		2.00
24	-	-	-	-	55.24	-	11.05	3.28	-	-	_	69.90
25	-	_	-	-	0.69	-	0.15	0.01	_	-	-	1.28
26	2.50E-04	3.19E-04	8.65E-05	4.78E-04	20.94	-	4.61	0.42				39.36
27	See Note		-			-			-			**
28	_	_	_	_	_	_	_	_	_	_	_	0.00
29	-	-		-	***		-	-	_	***	_	0.00
30	-			-	-	- -			_	-	-	0.00
31	-			-	***			-	_	***	-	0.00
32	-	-	***	-	FIF.	**	-	-	_	***		0.00
33	-	_	-	-	_	-	-	-	-	-	-	0.00
34												0.00
35	- 1.15E-03	1.47E-03	3.98E-04	2.20E-03			-					1.98
***************************************		***************************************			**************************************	•••••••••••••••••••••••••••••••••••••••	***************************************			annen en	***************************************	
36 37	5.99E-04 -	5.99E-04	1.20E-03	5.99E-04	- 6.69E-03		3.34E-02	-		***		0.39 0.05
38	-				1.28E-01		6.41E-01	-	_	***	-	0.03
39	2.00E-03	2.38E-03	1.68E-03	3.28E-03	79.0	0.14	16.55	3.71	0.00E+00	0.00E+00	0.00E+00	116.15
40	-	-	-	-	7.06E-05	-	-	2.21E-05	5.94E-04	-	5.40E-04	4.41E-03
41	-	***	NA.		2.35E-04		7.50E-05	÷~~~~~~~~~~	4.05E-06	2.48E-05	***	2.32E-03
42	-				3.15E-04	***		3.80E-05	6.91E-05		1.17E-04	1.58E-03
43	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.21E-04	0.00E+00	7.50E-05	2.95E-04	6.67E-04	2.48E-05	6.58E-04	0.008
44	2.00E-03	2.38E-03	1.68E-03	3.28E-03	79.0	0.14	16.55	3.71	6.67E-04	2.48E-05	6.58E-04	116.155
45												
46		MADAGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	annananananananananananananananananana	***************************************	осполомическим положений положений положений положений положений положений положений положений положений положе		000000000000000000000000000000000000000	onnanonanananananananananananananan	namanananananananananananananananan		nancananananananananananananananananana	annannannannannannannannannan

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10						PTE of	PTE of	
				Outlet Grain	Maximum Air	PM/PM10	PM/PM10	
	Stack ID	Process Description	Control Device	Loading (gr/dscf)	Flow Rate (scfm)	after Control*	after Control	after Control** (lb/hr)
11				(91/4001)	(001111)	(lb/hr)	(ton/yr)	(10/111)
12	S-103	Grain Receiving and pneumatic conveyor EU-11	Baghouse	0.004	12,600	0.43	1.89	0.07
13	S-111	Corn Receiving and storage system EU-12	Baghouse	0.004	15,000	0.51	2.25	0.09
14	S-112	Grain Transport system EU-12	Baghouse	0.004	1,354	0.05	0.20	0.01
15	inside	Storage: (7) Grain Storage Silos (EU- 13)	Baghouse	0.004	1,354	0.05	0.20	0.01
16	S-104 ((6) Hammermills and hopper (EU-14)	Baghouse	0.004	6,000	0.21	0.90	0.03
17		DDGS Storage (EU-34)	000000000000000000000000000000000000000	Q 000000000000000000000000000000000000	p0000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000
18	S-341	Storage silo	Baghouse	0.004	905	0.03	0.14	0.01
19	S-342	Storage silo	Baghouse	0.004	905	0.03	0.14	0.01
20	S-343	Surge Hopper	Baghouse	0.004	86	0.00	0.01	0.00
21	S-344	Surge Hopper	Baghouse	0.004	86	0.00	0.01	0.00
22	S-350	DDGS Rail Loadout (EU-35)	Baghouse	0.004	905	0.03	0.14	0.01
23	S-360	DDGS Truck Loadout (EU-36)	Baghouse	0.004	905	0.03	0.14	0.01
24	S-370	DDGS Rail Car Loader (EU-37)	None	0.004	905	0.03	0.14	0.01
25	S-380	DDGS Truck Loader (EU-38)	None	0.004	905	0.03	0.14	0.01
26	Total	***************************************			000000000000000000000000000000000000000	1.4	6.3	0.2

27 *Assume all PM emissions equal PM10 emissions.

28 ** Assume control
29
30 Methodology: * Assume controlled PM2.5 emissions equal 17% PM/PM10 emissions (AP-42 Table 9.9.1-1 Reference 40).

- 31 outlet grain loading (gr/dscf) provided by source with maximum air flow rate (scfm)
- 32 PTE of PM/PM10 after Control (lb/hr) = Outlet Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x (60 min/hr) x (1 lb/7000 gr)

 PTE of PM/PM10 after Control (ton/yr) = Outlet Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x (60 min/hr) x (1 lb/7000 gr) x (8760 hr/yr) x (1 ton/2000 lb)
- 34 PTE before Control (ton/yr) = PTE after Control (ton/yr) / (1-Control Efficiency)
- 35 PM2.5 Control Efficiency is assumed to be less than the PM/PM10 Control Efficiency.

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	l	J	К	L	М	N	0	Р	Q	R
1	Appendix A	A: Emissions Calculations								
2		Grain Handling								
3										
4	Company Name:	MGPI of Indiana, LLC								
5	Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025								
6	Significant Source Modification No.:	0296-35496-00005								
7	Significant Permit Modification No.:	029-35505-00005								
8		Kristen Willoughby								
9	Date:	12/22/2014								
10							ganeousousousousousousous			
			PM2.5	PTE of PM/PM10	PTE of PM2.5			Limited PTE		Limited PTE
	PTE of PM2.5 after Control (ton/yr)	PM/PM10 Control Efficiency	Control	before	before		Limited PTE PM10 (lb/hr)	PM2.5	Limited PTE PM (ton/yr)	PM10
11			Efficiency	Control (ton/yr)	Control (ton/yr)	FIVI (ID/III)	FIVITO (ID/TII)	(lb/hr)	rivi (toliryi)	(ton/yr)
	0.00	2004			900001000000000000000000	300000000000000000000000000000000000000			8	
12	0.32	99%	98%	189.2	16.1	***************************************		T	***************************************	
13	0.38	99%	98%	225.3	19.1	1.20	1.20	1.20	5.26	5.26
14	0.03	99%	98%	20.3	1.73	0.219	0.219	0.219	0.96	0.96
15	0.03	99%	98%	20.3	1.73					
16	0.15	99%	98%	90.1	7.66					
17						***************************************			***************************************	***************************************
18	0.02	99%	98%	13.6	1.16	0.136	0.136	0.136	0.60	0.60
19	0.02	99%	98%	13.6	1.16					
20	0.00	99%	98%	1.3	0.11					
21	0.00	99%	98%	1.3	0.11					
22	0.02	99%	98%	13.6	1.16	0.289	0.289	0.289	1.27	1.27
23	0.02	99%	98%	13.6	1.16					
24	0.02	0%	0%	0.14	0.02	1.25	1.25	1.25	5.48	5.48
25	0.02	0%	0%	0.14	0.02					
26	1.1	10.9	10.8	602.5	51.2	3.1	3.1	3.1	13.6	13.6
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1 A	<u> </u>	L	Appendix A: Emissions Calculations	С
2				om Distillation and Beer Wells
3			VOC EIIIISSIOIIS IIC	on Distillation and Deel Wells
4			Company Name	MCDI of Indiana I I C
5				MGPI of Indiana, LLC
				7 Ridge Avenue, Lawrenceburg, Indiana 47025
<u>6</u> 7			Significant Source Modification No.:	
			Significant Permit Modification No.:	
8				Kristen Willoughby
9			Date:	12/22/2014
10 EU-20, 25-29 Distillation				
11	Potential to Emit (PTE) of VOC:			
12				
	Maximum Usage	VOC Emission Factor	VOC Emission rate	VOC Emission rate
13		(lb/1000 gal)	(lb/hr)	
<u>13</u>	(gal/hr) 31,221	0.000679	0.02	(ton/yr) 0.1
15	31,221	0.00079	0.02	U. I
15 16 Methodology:				
16 Methodology:				
17	Emission factor is based on facility information and furnished by source.			
18	Emission Rate (lb/hr) = Usage (gal/hr)/1,000 x EF (lb/1,000 gal)			
19 20	Emission Rate (ton/yr) = Emission Rate (lb/hr) x 8,760 hr/yr / 2,000 lb/ton			
EU-20, EU25- EU-29 Distillation O	perations			
22				
23		VOC (lb/hr) =	0.02	
24				
25			Distillation	
22 23 24 25 26 27 28	Uncontrolled PTE	lb HAPs/lb VOC	ton/yr	
27	Acetaldehyde	3.03E-02	2.81E-03	
28	Propionaldehyde	2.20E-03	2.04E-04	
29 30 31	Methanol	2.20E-03	2.04E-04	
30	Formaldehyde	2.20E-03	2.04E-04	
31	Total Uncontrolled HAP		3.43E-03	
32				
33 Methodology:				
34	lb HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-0	0003		
34 35 36	HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb)			
36	$(10.11 \text{ for } 3.1) = 1.1 \cdot (10.11 \text{ for } 3.10 \text{ for } 3.00 for$			
37				
38 EU-23 and EU-24 Beer Wells #3 a n	d #1			
38 EU-23 and EU-24 Beer Wells #3 a nd			1.050	1,000 bu/hr
40	Maximum Usage		1,050	1,000 DU/III
*		Emission Factor	VOC Emission rate	VOC Emission rate
41	Pollutant	(lb/1,000 bu)	(lb/yr)	(ton/yr)
42	VOC	2.72	2.86	12.5
12 43	****	2.12	2.00	12.0
44 Methodology:				
	Emission factor is based on facility information and family by a survey			
45	Emission factor is based on facility information and furnished by source.			
	Emission rate (lb/hr) = Maximum usage $(1,000 \text{ bu/hr}) \times \text{EF} (lb / 1,000 \text{ bu})$			
47	Emission Rate (lb/hr) = Emission Rate (ton/yr) x 2,000 lb/ton / 8,760 hr/yr			
46 47 48 49	Emission Rate (lb/hr) = Emission Rate (ton/yr) x 2,000 lb/ton / 8,760 hr/yr			

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			Appendix A: Emissions Calculations	
			VOC Emissions from Open an	d Closed Fermentation
			Company Name:	MGPI of Indiana, LLC
			Address:	7 Ridge Avenue, Lawrenceburg, Indiana 4702
			Significant Source Modification No.:	
			Significant Permit Modification No.:	
				Kristen Willoughby
				: 12/22/2014
EU-21 Open Fermentation			Date	
CO-21 Open remientation	Potential to Emit (PTE) of VOC from Onen Formentations			
	Potential to Emit (PTE) of VOC from Open Fermentation:			
	Markey Harris		4 005 000	A hard on
	Maximum Usage		1,095,000	Du/yr
		Lemission Easter	VOC Emission rate	VOC Emission rate
	Pollutant	Emission Factor	VOC Emission rate	VOC Emission rate
		(lb/1,000 bu)	(lb/yr)	(ton/yr)
	Ethanol	14.2	15,549	7.77
	Ethyl Acetate	0.046	50	0.03
	Isoamyl Alcohol	0.013	14	0.007
	Isobutyl Alcohol	0.004	4	0.002
	Total VOC	14.3		7.81
Methodology:				
<u> </u>	Emission Factors taken from AP-42, Table 9.12.3-1			
	Emission Rate (ton/yr) = Usage (bu/yr)/1,000 x Emission Factor (lb/1,000 bu) / 2,000 lb/ton			
	Emission Rate (lb/hr) = Emission Rate (ton/yr) x 2,000 lb/ton / 8,760 hr/yr			
	Potential to Emit (PTE) of HAP from Open Fermentation:			
		VOC (lb/hr) =	1.78	
			Open Fermentation	1
	Uncontrolled PTE	lb HAPs/lb VOC	ton/yr	
	Acetaldehyde	4.02E-03	3.14E-02	
	Propionaldehyde	2.67E-04	2.09E-03	
		i	.	
	Methanol	1.33E-04	1.04E-03	4
	Formaldehyde	1.33E-04	1.04E-03	•
	Total Uncontrolled HAP		0.04	
Methodology:				
Methodology:	Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145	5-00003		
Methodology:	Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145	i-00003		
Methodology:	lb HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) \times VOC (lb/hr) \times 8760 (hrs/yr) \times 1/2000 (ton/lb)	5-00003		
		5-0003		
	$HAP (ton/yr) = E.F. (lb HAPs/lb VOC) \times VOC (lb/hr) \times 8760 (hrs/yr) \times 1/2000 (ton/lb)$	5-00003		
	HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation:	5-00003		
Methodology: EU-22 Closed Fermentation	$HAP (ton/yr) = E.F. (lb HAPs/lb VOC) \times VOC (lb/hr) \times 8760 (hrs/yr) \times 1/2000 (ton/lb)$	5-0003	8,103,000	bu/yr
	HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation:			
	HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage	Emission Factor	VOC Emission rate	VOC Emission rate
	HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant	Emission Factor (lb/1,000 bu)	VOC Emission rate (lb/yr)	VOC Emission rate (ton/yr)
	HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol	Emission Factor (lb/1,000 bu) 14.2	VOC Emission rate (lb/yr) 115,063	VOC Emission rate (ton/yr) 57.53
	HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant	Emission Factor (lb/1,000 bu)	VOC Emission rate (lb/yr)	VOC Emission rate (ton/yr)
	HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol	Emission Factor (lb/1,000 bu) 14.2	VOC Emission rate (lb/yr) 115,063	VOC Emission rate (ton/yr) 57.53
	Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol Ethyl Acetate Isoamyl Alcohol	Emission Factor (lb/1,000 bu) 14.2 0.046	VOC Emission rate (lb/yr) 115,063 373 105	VOC Emission rate (ton/yr) 57.53 0.19
EU-22 Closed Fermentation	Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol Ethyl Acetate Isoamyl Alcohol Isobutyl Alcohol	Emission Factor (lb/1,000 bu) 14.2 0.046 0.013 0.004	VOC Emission rate (lb/yr) 115,063 373	VOC Emission rate (ton/yr) 57.53 0.19 0.05 0.02
EU-22 Closed Fermentation	Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol Ethyl Acetate Isoamyl Alcohol	Emission Factor (lb/1,000 bu) 14.2 0.046 0.013	VOC Emission rate (lb/yr) 115,063 373 105	VOC Emission rate (ton/yr) 57.53 0.19 0.05
EU-22 Closed Fermentation	Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol Ethyl Acetate Isoamyl Alcohol Isobutyl Alcohol	Emission Factor (lb/1,000 bu) 14.2 0.046 0.013 0.004	VOC Emission rate (lb/yr) 115,063 373 105	VOC Emission rate (ton/yr) 57.53 0.19 0.05 0.02
	Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol Ethyl Acetate Isoamyl Alcohol Isobutyl Alcohol Uncontrolled VOC	Emission Factor (lb/1,000 bu) 14.2 0.046 0.013 0.004	VOC Emission rate (lb/yr) 115,063 373 105	VOC Emission rate (ton/yr) 57.53 0.19 0.05 0.02
EU-22 Closed Fermentation	Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol Ethyl Acetate Isoamyl Alcohol Isobutyl Alcohol Uncontrolled VOC Emission Factors taken from AP-42, Table 9.12.3-1	Emission Factor (Ib/1,000 bu) 14.2 0.046 0.013 0.004 14.263	VOC Emission rate (lb/yr) 115,063 373 105	VOC Emission rate (ton/yr) 57.53 0.19 0.05 0.02
EU-22 Closed Fermentation	Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol Ethyl Acetate Isoamyl Alcohol Isobutyl Alcohol Uncontrolled VOC	Emission Factor (Ib/1,000 bu) 14.2 0.046 0.013 0.004 14.263	VOC Emission rate (lb/yr) 115,063 373 105	VOC Emission rate (ton/yr) 57.53 0.19 0.05 0.02

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108					
109		Potential to Emit (PTE) of HAP from Closed Fermentation:			
110					
111		VOC (lb/hr)	=	13.19	
112					
113				Closed Fermentation	
114		Uncontrolled PTE	lb HAPs/lb VOC	ton/yr	
115		Acetaldehyde	4.02E-03	2.32E-01	
116		Propionaldehyde	2.67E-04	1.54E-02	
117		Methanol	1.33E-04	7.69E-03	
118		Formaldehyde	1.33E-04	7.69E-03	
119		Total Uncontrolled HAP		0.26	
108 109 110 111 112 113 114 115 116 117 118 119 120					
121	Methodology:				
122 123		lb HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003			
123		HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb)			

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51 52 53 54 55 56 57 58 59 60 61 62 63 VOC Emission rate (lb/hr) 65 1.78 66 0.006 67 0.002 68 0.0005 69 1.78 70 71 72 73 74 75 76 77 78 78 79 80 81 82 83
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61 62 63 VOC Emission rate (lb/hr) 65 1.78 66 0.006 67 0.002 68 0.0005 69 1.78 70 71 72 73 74 75 76 77 78 79 80 81 82 83
62 63 VOC Emission rate (lb/hr) 65 1.78 66 0.006 67 0.002 68 0.0005 69 1.78 70 71 72 73 74 75 76 77 78 79 80 81 82 83
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VOC Emission rate
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4		Company Name:
5		Address:
	Cimpiliaant Caynaa B	l l
<u>6</u> 7	Significant Source N	
8	Significant Permit N	Reviewer:
9		Date:
10		Date.
11 EU-31 and EU-33 Paddle Screens/ Conveyors		
LO-51 and LO-55 raddle octeens/ conveyors		
		Max Usage
12	Source	(gal/hr)
13	Spirits System	20,859
14	Whisky System	4,319
15		
16		00000000000000000000000000000000000000
17 Methodology:		
18	Emission Rate = Maximum Usage (gal/hr)/1,000 x VOC Emission factor (lb/1,000 gal)	
19	* Spirits System analysis of stillage based on 0.05% alcohol concentration.	
20	*Whisky System analysis of stillage based on 0.1% alcohol concentration.	
21		
22	VOC (lb/hr)	=
23		
24		
25	Uncontrolled PTE	lb HAPs/lb VOC
26	Acetaldehyde	4.02E-03
	Propionaldehyde	2.67E-04
28 29	Methanol	1.33E-04
29	Formaldehyde	1.33E-04
30	Total Uncontrolled HAP	
31 Methodology:		
32 33	Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 and derived from the mash scrubber emissions	
33	HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb)	

	D	E	F
1	ssions Calculations		
2	Summary of Emissions		
3			
4	MGPI of Indiana, LLC		
5	7 Ridge Avenue, Lawrenceburg, Indiana 47025		
	0296-35496-00005		
	029-35505-00005		
	Kristen Willoughby		
9	12/22/2014		
10			
11			
		VOC Emission	1
	VOC Emission Factor*	rate	rate
12	(lb/1,000 gal)	(lb/hr)	(ton/yr)
13	3.4	70.92	311
14	6.8	29.37	129
15	Total:	100	440
16			
17			
18			
19			
20			
21	400 00		
22	100.29		
23	C4:II	1	
24 25	Stillage ton/w		
26	ton/yr 1.77		
27	1.77 1.17E-01		
28	5.84E-02		
29	5.84E-02 5.84E-02		
30	2.00		
31	2.00	J	
32			
33			
33			

	A	В	С
1			
2			
3			
4			
5			
6			
7			
9			
	Rotary Dryers		
	Rotary Dryers		Maximum Usage:
11 12			Maximum Osage.
			Controlled
			Emission Factor
13			(lb/ton)
14		PM	0.27
13 14 15 16 17		PM10	0.27
16		PM2.5	0.27
17			1 2,2,
18 Method	dology:		
18 Method 19 20	0,7	Controlled emission Factor from AP-42, Table 9.9.7-1	
20		Controlled Emissions (ton/yr) = Usage (ton/yr) x EF (lb/ton) x 8,760 hr/yr / 2,000 lb/ton	
21		Uncontrolled emissions estimated based on an 85% control efficiency for controlled emissions.	
22		PM2.5 emissions conservatively assumed to be equal to PM10 emissions.	
23			
21 22 23 24		VOC Emissions from the Dryers	
			Water Content
		Dryer Feed Rate (ton/hr)	1 1
25			(% by wt)
26		25.5	66.66%
27			
28 Method	dology		
29 30 31		Potential VOC Emissions from Dryers (lb/hr) = Dryer Feed Rate (25.5 ton/hr) x Water Content of Feed (% by wt) x (lb VOC/lb water) x (2000 lb/1 ton)	
30		Potential VOC Emissions from Dryers (ton/yr) = Potential VOC Emissions from Dryers (lb/hr) x (8760 hr/yr) x (1 ton/2000 lb)	
31			
32		HAP Emissions from the Dryers	
			11000/
		HAP	HAP % (by wt of
22			VOC)
33 34 35 36			
34		Acetaldehyde	6.18%
35		Acrolein	0.37%
36		Methanol	1.24%
37		Formaldehyde	0.04%
38		Total	
39	.1 - 1	Note: HAP emission rates based on performance tests at similar facilities.	
40 Method	aology		
41		Potential HAP Emissions from Dryers (lb/hr) = Potential VOC emissions from dryer (lb/hr) x HAP % by wt of VOC	
42		Potential HAP Emissions from Dryers (ton/yr) = Potential HAP Emissions from Dryers (lb/hr) x (8760 hr/yr) x (1 ton/2000 lb)	

	D	E	F	G	Н
1	Appendix A: Emissions Calculations	L	1		ı
2		Five (5) rotary dryers			
3					
4		MGPI of Indiana, LLC			
5		7 Ridge Avenue, Lawrenceburg, Indiana 47025			
6	Significant Source Modification No.:				
7	Significant Permit Modification No.:				
8		Kristen Willoughby			
9 10	Date:	12/22/2014			
11	25.5	ton/hr	Limited Usage:	147,000	ton/vr
12	25.5	ton/m	Littlited Osage.	147,000	tori/yi
12					
	Controlled Emissions	Controlled Emissions	Uncontrolled	Uncontrolled	Limited
	(lb/hr)	(ton/yr)	Emissions	Emissions	Emissions
13	(16/111)	(total))	(lb/hr)	(ton/yr)	(ton/yr)
14	6.885	30.2	45.90	201.0	19.85
15	6.885	30.2	45.90	201.0	19.85
16	6.885	30.2	45.90	201.0	19.85
17					
18					
19					
20					
21					
22					
23					
24		<u>r</u>	D 1 11 11 100	1	
	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		Potential VOCs		
3.	VOC Content of Water (lb VOC/lb water)	Potential VOC from Dryers (lb/hr)	from Dryers		
25 26	0.000	204.0	(ton/yr)		
27	0.006	204.0	893.4	J	
28					
29					
30					
31					
32					
			1		
	Potential HAP from Dryers (lb/hr)	Potential HAP from Dryers (ton/yr)			
33					
34	12.61	55.24	1		
35	0.75	3.28]		
36	2.52	11.05]		
37	0.07	0.32]		
		69.9			
38		1	」		
39			_		
39 40			-		
39			-		

A	В	С	D	E	F	G	Н	1	J	K	L	М	N	0	Р	Q	R	S	Т	U
1 <u>2</u>			DDG Cooler a		ssions Calculations em Emission Estimates															
3 4 5 6 7 8 9			ficant Source M	Address: 7 lodification No.: 0 lodification No.: 0 Reviewer: H																
Emission Unit	Emission	Point	Description	Uncontrolled PM Emission Factor	Uncontrolled PM₁₀ Emission Factor	Uncontrolled PM _{2.5} Emission Factor	DDG thro	ughput	PM En	ntrolled mission ate	PM ₁₀ Ei	trolled mission ite	PM _{2.5} E	ntrolled mission ate		olled PM ion Rate	Control Emissi	led PM ₁₀ on Rate	PM _{2.5} E	rolled Emission ate
.2				(lb/ton)	(lb/ton)	(lb/ton)	(ton/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr
3 EU-32	4 Screw Conveyors, 3 Conveyors, 1	3 Product	Grain Conveying	0.061	0.034	0.0058	9.56	83,754	0.58	2.55	0.33	1.42	0.06	0.24	0.09	0.38	0.05	0.21	0.01	0.04
.4	Drum Co	ooler	Grain Conveying	0.061	0.034	0.0058			0.58	2.55	0.33	1.42	0.06	0.24	0.58	2.55	0.33	1.42	0.06	0.24
15	I		Conveying					Totals	1.17	5.11	0.65	2.85	0.11	0.49	0.67	2.94	0.37	1.64	0.06	0.28
Emission Unit	Emission	Point	Description	Controlled PM Emission Factor	Controlled PM ₁₀ Emission Factor	Controlled PM _{2.5} Emission Factor	DDG thro	ughput	į.	olled PM on Rate	1		1	led PM _{2.5} on Rate		rolled PM ion Rate	PM ₁₀ E	trolled mission ate	PM _{2.5} E	ntrolled Emissior ate
18				(lb/ton)	(lb/ton)	(lb/ton)	(ton/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr
19 EU-32	Hammer	Mill	Hammer Milling ^(b)	0.067	0.052	0.036	9.56	83,754	0.64	2.81	0.49	2.16	0.35	1.53	12.81	56.12	9.86	43.17	1.74	7.64
20 21								Totals	0.64	2.81	0.49	2.16	0.35	1.53	12.81	56.12	9.86	43.17	1.74	7.64
Emission	Emission	Point	Description		Limited PM Emission Rate	Limited PM ₁₀ Emi		Limited Emission	on Rate											
23	4 Screw Convey	ors 2 Drag		(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	=										
24 EU-32	Conveyors, 1	3 Product	Grain Conveying	0.58	2.55	0.33	1.42	0.06	0.24											
25	Drum Co	ooler	Grain Conveying	0.58	2.55	0.33	1.42	0.06	0.24											
EU-32	Hammer	Mill	Hammer Milling ^(b)	0.64	2.81	0.49	2.16	0.35	1.53											
27	<u> </u>		Totals	1.81	7.91	1.14	5.01	0.46	2.01	=										
(b)	Factors taken from As recommended	by AP-42 App Uncontrolled	endix B.2, Table Collection	B.2.2 for Category	rain Elevators and Processes). 7 - "Grain Processing" on Page 17, the particle size Controlled	distribution for PM ₁₀ is	61% of Tot	al PM and	I for PM ₂	₅ is 23% ·	of Total F	PM for								
	PM Size Range	wt% 23%	Efficiency 80%	Controlled Wt 0.046	wt% 54%															
	PM _{2.5} PM _{2.5} to PM ₁₀	23% 38%	95%	0.048	22%															
15	PM ₁₀ and higher	39%	95%	0.0195	23%															
6		1		0.0845																
9 0 1 2 3 4	Uncontrolled PTE (Controlled PTE Ha Controlled PTE Ha Uncontrolled PTE I	ton/yr) = [Unc mmermill (lb/h mmermill (ton/ PM2.5 Hamme PM/PM10 Han	controlled Emission) = [Controlled E /yr) = [Controlled ermill (lb/hr) = Co mmermill (lb/hr) =	n Factor (lb/ton DDC on Factor (lb/ton DD Emission Factor (lb/ Emission Factor (ll ontrolled PTE Hamm Controlled PTE Ha	B) x Production Rate (ton/hr)] BG) x Production Rate (ton/yr) / 2,000 lb/ton] Ston DDG) x Production Rate (ton/hr)] Bo/ton DDG) x Production Rate (ton/yr) / 2,000 lb/ton] Stermill (lb/hr) / (1 - 80%) Stermill (lb/hr) / (1 - 95%)															

A			_	_	_		1 .	T .		1			_ 1	_ 1		_
	B C	D	E	F	G	Н		J	K	L	M	N	0	Р	Q	R
			000000000000000000000000000000000000000												*****************************	***********************
				Uncontrolled Emi	, ,		5	016		0033	0.0		0.00		Total	HAP
Emission Unit	Emission Point	Description		Fact		DDG		n DDG		n DDG	lbs/ton		lbs/ton		Emiss	
Unit				DDG throughput	V			dehyde		olein	Formalo		Meth			
			(ton/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr
	Drum Cooler	Cooling Drum														
	Bruin Coolei	Apparatus														
-	E. I. O. O.	Grain														
	Existing Screw Conveyor	Conveying														
EU-32	New 3 Screw Conveyors, 2 Drag	Grain	10	83,754	2.09	9.16	0.16	0.69	0.0031	0.014	0.10	0.43	0.034	0.15	0.292	1.28
	Conveyors, 3 Product	Conveying														
	Conveyors, 1 K-Valve	Conveying														
	Existing Hammer Mill and	Hammer Milling														
	Cyclone	<u> </u>							<u> </u>							
(b) VOC emission factor for DDG co) Methodology :			ermitted in Indiana under Permit #T169-31191	.00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	itage of th	ne VOC e	mission fa	ctor
Methodolo (a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro	oughput (ton/hr) X	DDG Cooling Emiss		.00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b	 VOC emission factor for DDG co Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Th 	oughput (ton/hr) X nroughput (ton/yr) X	DDG Cooling Emiss X DDG Cooling Emis	sion factor (lb/ton)	00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Th Dryer emissions	oughput (ton/hr) X iroughput (ton/yr) X tpy from Drying	DDG Cooling Emiss X DDG Cooling Emis % of VOC	sion factor (lb/ton)	.00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Th Dryer emissions	tpy from Drying 8.38	DDG Cooling Emiss X DDG Cooling Emis % of VOC	sion factor (lb/ton)	00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Th Dryer emissions VOC Acetaldehyde	tpy from Drying 8.38 0.63	DDG Cooling Emiss X DDG Cooling Emis % of VOC 7.50%	sion factor (lb/ton)	00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Th Dryer emissions VOC Acetaldehyde Acroleii	tpy from Drying 8.38 0.63 0.01	Modern Cooling Emiss	sion factor (lb/ton)	.00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Th Dryer emissions VOC	tpy from Drying 8.38 0.63 0.01 0.39	DDG Cooling Emiss X DDG Cooling Emis % of VOC 7.50%	sion factor (lb/ton)	00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Th Dryer emissions VOC Acetaldehyde Acroleir Formaldehyde Methano	tpy from Drying 8.38 0.63 0.01 0.39 0.14	Modern Cooling Emiss X DDG Cooling Emiss X DDG Cooling Emiss See See See See See See See See See S	sion factor (lb/ton)	00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Th Dryer emissions VOC Acetaldehyde Acroleii Formaldehyde Methano Other DDG Cooler Emission Fac	tpy from Drying 8.38 e 0.63 n 0.01 e 0.39 ol 0.14	Modern Cooling Emiss X DDG Cooling Emiss X DDG Cooling Emiss See See See See See See See See See S	sion factor (lb/ton)	00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Th Dryer emissions VOC Acetaldehyde Acroleii Formaldehyde Methano Other DDG Cooler Emission Fac POET Biorefining - N Mancheste	tpy from Drying 8.38 9.063 0.01 9.01 9.01 0.14	Modern Cooling Emiss X DDG	sion factor (lb/ton) ssion factor (lb/ton) x ton/2,000 lb	00068 (POET Biorefin	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Thro Dryer emissions VOC Acetaldehyde Acroleii Formaldehyde Methano Other DDG Cooler Emission Fac POET Biorefining - N Mancheste 5.685	tpy from Drying 8.38 9.063 0.01 9.014 etors	Modern Cooling Emiss X DDG	sion factor (lb/ton)	00068 (POET Biorefin	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor
(a (b) VOC emission factor for DDG co) Methodology : Emission rate (lb/hr) = DDG Thro Emission rate (ton/yr) = DDG Thro Dryer emissions VOC Acetaldehyde Acroleii Formaldehyde Methano Other DDG Cooler Emission Fac POET Biorefining - N Mancheste 5.688	tpy from Drying 8.38 9.063 0.01 9.01 9.01 0.14	% of VOC 7.50% 0.15% 4.65% 1.65% From June 2004 tes	sion factor (lb/ton) ssion factor (lb/ton) x ton/2,000 lb	00068 (POET Biorefir	ing - North Man	nchester).	HAP emi	ission fac	tors are d	erived as	a percen	ntage of th	ne VOC e	mission fa	ctor

	tpy from Drying	% of VOC
VOC	8.38	
Acetaldehyde	0.63	7.50%
Acrolein	0.01	0.15%
Formaldehyde	0.39	4.65%
Methanol	0.14	1.65%

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Appendix B: Emissions Calculations Source		A D			T	Г		I 11	l ı		v	1 1 1 1 1 1	T NI			
Company Name MCP of Indians, LLC	1	A B	С	D	<u> </u>	F F	Annendiy R	Emissions (J	K	L M	N	0	P	Q
Company Name: MSPI of Indians, LLC Address: 7 Ridge Avenue, Laurenzeburg, Indians 47036	2															
Control Ellipseror For Critical Emissions From DOG Political Emission From DOG Political E	\vdash							(-								
Address: 7 Rigin Aerones Lawrenceburg, helians 47825	\vdash					•										
Significant Permit Modification No.: 0281-3566-00005	4					Con	npany Name:	MGPI of Indi	iana, LLC							
Significant Pomission Source	5						Address:	7 Ridge Ave	nue, Lawrencebui	rg, Indiana 4	47025					
Reviewer Kinterior Willoughby Date: 1922/2014 Date: 1922/2014 Date: 1922/2014 Date: 1922	6				Signif	icant Source Mod	ification No.:	0296-35496-	00005							
Reviewer Kinterior Willoughby Date: 1922/2014 Date: 1922/2014 Date: 1922/2014 Date: 1922	7				Signi	ficant Permit Mod	ification No.:	029-35505-0	0005							
Date: 1922/2014 1	-				- 19											
1	$\vdash \vdash \vdash$								oughby							
Combustion Source	\vdash						Date:	12/22/2014								
19 Combission Source Milestury Mile	10	***************************************		EXIII/		900000000000000000000000000000000000000	I FUOLUSANA									
20 Diversified Days Healt and Capacity 45 384,200 1,020 386,47	11	Cor	mbustion Source	_	1	8		100 100 100 100 100 100 100 100 100 100								
3	12				<u> </u>	*	<u> </u>									
Total Holes (Injury Capacity S3 444,280 455,18	13															
Production Capacity Solid	14				<u> </u>	,	<u> </u>									
1	15		<u> </u>		•	*		•								
Total Horizontal Control Efficiency For Criteria Emissions Polity Po	16			ton/hr	ton/yr											
Politaria	17	OHOIL ICHII DISHIICI	Draduation(b)	9.6	83,754											
Polition Final Prince Polition Final Prince Polition Final Prince F	18															
Mark	10			Pollutant	1											
Voc Sey Co Sey	20	Control Efficiency For (Criteria Emissions	HAPs												
CO 90% PM/PM PM PM PM PM PM PM	21	· · · · · · · · · · · · · · · · · · ·	r													
PM/PM_oFM_oFM_oFM_oFM_oFM_oFM_oFM_oFM_oFM_oF	22	(70 Nemov	, ai)													
Pollutant	23			PM/PM ₁₀ /PM _{2.5}	98%											
Mary	24		99999999999999999999999999999999999999			•										
Description	25		Pollutant													
Emission Factor Ibs/MMStu Ibs/MMStu Ibs/mode	26	Emissions From DDG	Uncontrolled	0.1	2	2.0		190 190 190 190 190 190 190 190 190 190	0.45	10.0		10.0	10	0.0	10	0.0
Name	27	Drying (EU-39)	1 8	lbs/Mi	MBtu	lbs/MM	Btu	lbs	ton DDG/	lbs/ton DI	DG II	s/ton DDG	lbs/to	n DDG	lbs/to	n DDG
	28		 	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr t	py lb	s/hr tpy	lbs/hr	tpy	lbs/hr	tpy
Limited PTE 6.36 27.86 10.60 46.43 4.30 18.84 1.91 8.38 1.91 8.3	29	Uncontrolle	d PTE	6.36	27.86	106.00	464.28	4.30	18.84	95.61 418	3.77 9	5.61 418.7	7 95.61	418.77	95.61	418.77
Actaldehyde Formaldehyde Acrolein Methanol Combustion Natural Gas Natural Gas Combustion Natural Gas Natural Gas Combustion Natural Gas Natural Ga	30	Controlled	DTE			40.00	40.40	<u> </u>	_	101 8	38 1	04 0 00	1 0 1	0.20	1	200
Acetaldehyde Formaldehyde Acrolein Methanol M	31			-	-	10.60	46.43	-		1.91 0.	30 1	.91 0.30	1.91	0.30	1.91	8.38
Accomposition Accompositi	201	Limited F			27.86				18.84						-	ļ
AP Emissions From 10	32	Limited F			27.86				18.84		38 1	.91 8.38	1.91		-	ļ
Doc Drying (EU-39) Emission (EU-39)	32	Limited F		6.36		10.60	46.43	4.30		1.91 8.	38 1	.91 8.38	1.91	8.38	-	ļ
State Stat			PTE Pollutant	6.36		10.60	46.43	4.30		1.91 8.	38 1	.91 8.38 ar HAP (fron latural Gas	1.91	8.38 HAP	-	ļ
Uncontrolled PTE	33	HAP Emissions From	Pollutant	6.36 Acetald	ehyde	10.60 Formalde	46.43 ehyde	4.30	Acrolein	1.91 8.	38 1 ol N C	.91 8.38 al HAP (from latural Gas ombustion)	1.91	8.38 HAP	-	ļ
Remarks of the first of the fir	33 34 35	HAP Emissions From	Pollutant Oncontrolled Emission	6.36 Acetald 0.8	ehyde 5 DDGS	Formalde 0.31 lbs/ton E	46.43 ehyde DDGS	4.30	Acrolein 0.01	Methano 0.11 lbs/ton DD	38 1 ol N C	.91 8.38 CAI HAP (from latural Gas ombustion) See Below	1.91 Total	HAP ions ^(e)	-	ļ
Limited PTE 1.91 8.38 1.48 6.49 0.10 0.42 1.05 4.61 0.09 0.41 8.99 20.30	33 34 35 36	HAP Emissions From DDG Drying (EU-39)	Pollutant Oncontrolled Emission England	6.36 Acetald 0.4 lbs/ton lbs/hr	ehyde 5 DDGS tpy	Formalde 0.31 lbs/ton E	46.43 ehyde DDGS tpy	4.30	Acrolein 0.01 ton DDGS tpy	Methano 0.11 lbs/ton DE lbs/hr t	38 1 ol N C OGS py lb	.91 8.38 FAI HAP (from latural Gas ombustion) See Below s/hr tpy	1.91 Total Emiss	HAP ions ^(e)	-	ļ
Combustion HAPs - Organics Formaldehyde Hexane Total - Organics	33 34 35 36 37	HAP Emissions From DDG Drying (EU-39) Uncontrolle	Pollutant Oncontrolled Emission Control Units	6.36 Acetald 0.4 lbs/ton lbs/hr 4.78	ehyde 5 DDGS tpy 20.94	10.60 Formalde 0.31 lbs/ton E lbs/hr 2.96	46.43 ehyde DDGS tpy 12.98	4.30 	0.01 ton DDGS tpy 0.42	1.91 8. Methano 0.11 lbs/ton DD lbs/hr tp 1.05 4.	38 1 ol N C oGS oy lb 61 0	.91 8.38 TAI HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41	1.91 Total Emiss Ibs/hr 8.99	HAP ions ^(e) tpy 39.36	-	ļ
Combustion HAPs - Organics	33 34 35 36 37 38	HAP Emissions From DDG Drying (EU-39) Uncontrolle Controlled	POllutant Oncontrolled Emission Englow Units d PTE PTE	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14	ehyde 5 DDGS tpy 20.94 0.63	10.60 Formalde 0.31 lbs/ton E lbs/hr 2.96 0.09	46.43 ehyde DDGS tpy 12.98 0.39	4.30 	0.01 ton DDGS tpy 0.42 0.01	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
Benzene Dichlorobenzene Formaldehyde Hexane Toluene 3.4E-03 Above Semission Factor in lb/MMcf 2.1E-03 1.2E-03 Above Semission Factor in lb/MMcf 2.731E-04 2.731E-04 4.097E-01 7.738E-04 4.112E-01 7.738E-04 4.112E-01 4.112E-01 4.097E-01 7.738E-04 4.112E-01 4.097E-01 4.097E-01 7.738E-04 4.112E-01 4.097E-01 4.097E-01 7.738E-04 4.112E-01 4.097E-01 4.097E-01 4.097E-01 7.738E-04 4.112E-01 4.097E-01 4.097E-01 4.097E-01 4.097E-01 7.738E-04 4.112E-01 4.097E-01 4.09	33 34 35 36 37 38 39	HAP Emissions From DDG Drying (EU-39) Uncontrolle Controlled	POllutant Oncontrolled Emission Englow Units d PTE PTE	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14	ehyde 5 DDGS tpy 20.94 0.63	10.60 Formalde 0.31 lbs/ton E lbs/hr 2.96 0.09	46.43 ehyde DDGS tpy 12.98 0.39	4.30 	0.01 ton DDGS tpy 0.42 0.01	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
1.2E-03 1.2E-03 1.2E-03 1.8E+00 3.4E-03 3.4E-04 4.112E-01 3.4E-01 3.	33 34 35 36 37 38 39 40	HAP Emissions From DDG Drying (EU-39) Uncontrolle Controlled	POllutant Oncontrolled Emission Englow Units d PTE PTE	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14	ehyde 5 DDGS tpy 20.94 0.63 8.38	10.60 Formalde 0.31 lbs/ton E lbs/hr 2.96 0.09 1.48	46.43 ehyde DDGS tpy 12.98 0.39 6.49	4.30 	0.01 ton DDGS tpy 0.42 0.01	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
Above Above	33 34 35 36 37 38 39 40 41	HAP Emissions From DDG Drying (EU-39) Uncontrolle Controlled	POllutant Oncontrolled Emission Englow Units d PTE PTE	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14 1.91	ehyde 5 DDGS tpy 20.94 0.63 8.38	10.60 Formalde 0.31 lbs/ton E lbs/hr 2.96 0.09 1.48 ombustion HAPs -	46.43 ehyde DDGS tpy 12.98 0.39 6.49 Organics	4.30 Ibs/ Ibs/hr 0.10 0.00 0.10	0.01 ton DDGS tpy 0.42 0.01 0.42	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
4.779E-04 2.731E-04 4.097E-01 7.738E-04 4.112E-01 4.097E-01 7.738E-04 4.112E-01 5.00	33 34 35 36 37 38 39 40 41 42	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F	Pollutant Oncontrolled Emission Factors(c) Units d PTE PTE	6.36 Acetald 0.8 Ibs/hr 4.78 0.14 1.91 Benzene	ehyde 5 DDGS tpy 20.94 0.63 8.38 Co Dichlorobenzene	Formalde 0.31 lbs/ton E lbs/hr 2.96 0.09 1.48 ombustion HAPs - Formaldehyde	46.43 chyde DDGS tpy 12.98 0.39 6.49 Organics Hexane	4.30 Ibs/hr	0.01 ton DDGS tpy 0.42 0.01 0.42	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
17	33 34 35 36 37 38 39 40 41 42	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F	Pollutant Oncontrolled Emission Factors(c) Units d PTE PTE	6.36 Acetald 0.8 Ibs/hr 4.78 0.14 1.91 Benzene	ehyde 5 DDGS tpy 20.94 0.63 8.38 Co Dichlorobenzene	Formalde 0.31 lbs/ton E lbs/hr 2.96 0.09 1.48 ombustion HAPs - Formaldehyde Included	46.43 chyde DDGS tpy 12.98 0.39 6.49 Organics Hexane	4.30 Ibs/hr	0.01 ton DDGS tpy 0.42 0.01 0.42	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
Combustion HAPs - Metals Cadmium Chromium Manganese Nickel Total - Metals	33 34 35 36 37 38 39 40 41 42 43	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F	Pollutant Oncontrolled Emission Factors(c) Units d PTE PTE	6.36 Acetald 0.8 Ibs/hr 4.78 0.14 1.91 Benzene	ehyde 5 DDGS tpy 20.94 0.63 8.38 Co Dichlorobenzene	Formalde 0.31 lbs/ton E lbs/hr 2.96 0.09 1.48 ombustion HAPs - Formaldehyde Included	46.43 chyde DDGS tpy 12.98 0.39 6.49 Organics Hexane	4.30 Ibs/hr	0.01 ton DDGS tpy 0.42 0.01 0.42	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
Combustion HAPs - Metals	33 34 35 36 37 38 39 40 41 42 43 44 45 46	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F	Pollutant Oncontrolled Emission Factors(c) Units d PTE PTE PTE	6.36 Acetald 0.8 Ibs/ton Ibs/hr 4.78 0.14 1.91 Benzene 2.1E-03	ehyde 5 DDGS tpy 20.94 0.63 8.38 Co Dichlorobenzene 1.2E-03	Formalde 0.31 lbs/ton E lbs/hr 2.96 0.09 1.48 ombustion HAPs - Formaldehyde Included	46.43 chyde DDGS tpy 12.98 0.39 6.49 Organics Hexane 1.8E+00	4.30 Ibs/hr	0.01 ton DDGS tpy 0.42 0.01 0.42 Total - Organics	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
Lead Cadmium Chromium Manganese Nickel Total - Metals Emission Factor in lb/MMcf 5.0E-04 1.1E-03 1.4E-03 3.8E-04 2.1E-03 Potential Emission in tons/yr 1.138E-04 2.503E-04 3.186E-04 8.648E-05 4.779E-04 1.247E-03	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F	Pollutant Oncontrolled Emission Factors(c) Units d PTE PTE PTE	6.36 Acetald 0.8 Ibs/ton Ibs/hr 4.78 0.14 1.91 Benzene 2.1E-03	ehyde 5 DDGS tpy 20.94 0.63 8.38 Co Dichlorobenzene 1.2E-03	Formalde 0.31 lbs/ton E lbs/hr 2.96 0.09 1.48 ombustion HAPs - Formaldehyde Included	46.43 chyde DDGS tpy 12.98 0.39 6.49 Organics Hexane 1.8E+00	4.30 Ibs/hr	0.01 ton DDGS tpy 0.42 0.01 0.42 Total - Organics	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
Emission Factor in Ib/MMcf 5.0E-04 1.1E-03 1.4E-03 3.8E-04 2.1E-03 5.2 Potential Emission in tons/yr 1.138E-04 2.503E-04 3.186E-04 8.648E-05 4.779E-04 1.247E-03 5.5	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F	Pollutant Oncontrolled Emission Factors(c) Units d PTE PTE PTE	6.36 Acetald 0.8 Ibs/ton Ibs/hr 4.78 0.14 1.91 Benzene 2.1E-03	ehyde 5 DDGS tpy 20.94 0.63 8.38 Co Dichlorobenzene 1.2E-03 2.731E-04	Formalde 0.31 Ibs/ton E Ibs/hr 2.96 0.09 1.48 ombustion HAPs - Formaldehyde Included Above	46.43 chyde DDGS tpy 12.98 0.39 6.49 Organics Hexane 1.8E+00 4.097E-01	4.30 Ibs/hr	0.01 ton DDGS tpy 0.42 0.01 0.42 Total - Organics	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
52 Solution Soluti	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F	Pollutant Oncontrolled Emission Factors(c) Units d PTE PTE PTE	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14 1.91 Benzene 2.1E-03 4.779E-04	ehyde 5 DDGS	Formalde 0.31 bs/ton E bs/hr 2.96 0.09 1.48 mbustion HAPs - Formaldehyde Included Above	46.43 ehyde DDGS tpy 12.98 0.39 6.49 Organics Hexane 1.8E+00 4.097E-01	4.30 Ibs/ Ibs/hr	O.01 ton DDGS tpy 0.42 0.01 0.42 Total - Organics 4.112E-01	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
53 Fotential Emission in tons/yr 1.138E-04 2.503E-04 3.186E-04 8.648E-05 4.779E-04 1.247E-03 1.247	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F Emission Factor in lb/MM Potential Emission in tor	Pollutant Oncontrolled Emission Factors (c) Units d PTE PTE PTE Mcf	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14 1.91 Benzene 2.1E-03 4.779E-04	ehyde 5 DDGS	Formalde 0.31 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Included Above	46.43 chyde DDGS tpy 12.98 0.39 6.49 Organics Hexane 1.8E+00 4.097E-01 - Metals Manganese	### 4.30	O.01 ton DDGS tpy 0.42 0.01 0.42 Total - Organics 4.112E-01	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
Potential Emission in tons/yr 1.138E-04 2.503E-04 3.186E-04 8.648E-05 4.779E-04 1.247E-03	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F Emission Factor in lb/MM Potential Emission in tor	Pollutant Oncontrolled Emission Factors (c) Units d PTE PTE PTE Mcf	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14 1.91 Benzene 2.1E-03 4.779E-04	ehyde 5 DDGS	Formalde 0.31 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Included Above	46.43 chyde DDGS tpy 12.98 0.39 6.49 Organics Hexane 1.8E+00 4.097E-01 - Metals Manganese	### 4.30	O.01 ton DDGS tpy 0.42 0.01 0.42 Total - Organics 4.112E-01	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
55	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F Emission Factor in lb/MM Potential Emission in tor	Pollutant Oncontrolled Emission Factors (c) Units d PTE PTE PTE Mcf	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14 1.91 Benzene 2.1E-03 4.779E-04	ehyde 5 DDGS	Formalde 0.31 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Included Above	46.43 chyde DDGS tpy 12.98 0.39 6.49 Organics Hexane 1.8E+00 4.097E-01 - Metals Manganese	### 4.30	O.01 ton DDGS tpy 0.42 0.01 0.42 Total - Organics 4.112E-01	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
56	33 34 35 36 37 38 40 41 42 43 44 45 46 47 48 49 50 51 52 53	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F Emission Factor in lb/MM Potential Emission in tor	Pollutant Oncontrolled Emission Factors (c) Units d PTE PTE PTE Mcf Mcf	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14 1.91 Benzene 2.1E-03 4.779E-04 Lead 5.0E-04	ehyde 5 DDGS	Formalde 0.31 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Included Above Combustion HAPs Chromium 1.4E-03	46.43 hyde DDGS tpy 12.98 0.39 6.49 Organics Hexane 1.8E+00 4.097E-01 - Metals Manganese 3.8E-04	### 4.30	O.01 ton DDGS tpy 0.42 0.01 0.42 Total - Organics Total - Metals	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
	33 34 35 36 37 38 40 41 42 43 44 45 46 47 48 49 50 51 52 53	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F Emission Factor in lb/MM Potential Emission in tor	Pollutant Oncontrolled Emission Factors (c) Units d PTE PTE PTE Mcf Mcf	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14 1.91 Benzene 2.1E-03 4.779E-04 Lead 5.0E-04	ehyde 5 DDGS	Formalde 0.31 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Included Above Combustion HAPs Chromium 1.4E-03	46.43 hyde DDGS tpy 12.98 0.39 6.49 Organics Hexane 1.8E+00 4.097E-01 - Metals Manganese 3.8E-04	### 4.30	O.01 ton DDGS tpy 0.42 0.01 0.42 Total - Organics Total - Metals	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ
	33 34 35 36 37 38 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54	HAP Emissions From DDG Drying (EU-39) Uncontrolled Controlled Limited F Emission Factor in lb/MM Potential Emission in tor	Pollutant Oncontrolled Emission Factors (c) Units d PTE PTE PTE Mcf Mcf	6.36 Acetald 0.4 Ibs/ton Ibs/hr 4.78 0.14 1.91 Benzene 2.1E-03 4.779E-04 Lead 5.0E-04	ehyde 5 DDGS	Formalde 0.31 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Ibs/ton E Ibs/hr 2.96 0.09 1.48 Included Above Combustion HAPs Chromium 1.4E-03	46.43 hyde DDGS tpy 12.98 0.39 6.49 Organics Hexane 1.8E+00 4.097E-01 - Metals Manganese 3.8E-04	### 4.30	O.01 ton DDGS tpy 0.42 0.01 0.42 Total - Organics Total - Metals	1.91 8.	38 1 ol N C ogs py lb 61 0 14 2.83	al HAP (from latural Gas ombustion) See Below s/hr tpy .09 0.41 2E-03 0.01	1.91 Total Emiss lbs/hr 8.99 0.27	HAP ions ^(e) tpy 39.36 1.18	1.91	ļ

	Α	B	Т с		D	Т	F	F F	G	Т	Н	T	1		Т	т	K	Т		М		N	Т	0	P	Το
57 Note	es:		inputs of dire	ct fired	dryer and of therr	nal o	xidizer provided b	y the manufacture		L										1 141					<u>.</u>	
58	(a)			_	y grain (DDG) pro erial balance is as			facility information	n. Capacity	of pro	posed s	ystem	will be	e equiv	/alent	to co	mbine	d cap	acity	of the	existi	ing st	eam-tı	be dr	yers	
59	(b)	· ·	Ü	,			(lb/hr)	%solids																		
60	(6)				Dryer f	- had	35,508	35.5%	-																	
61					Water / Evapora		21,508	0%																		
62					DDG Produc		14,000	90%																		
63		Annual oners	ations assume	a that th	he proposed dryer		•		viahout the v	ı a a r																
64		•			ors and cyclone/th				•		turer (ICI	M Inc) As	sume	PM/P	M ₄₀ e	missi	ons ar	e ear	ıivalen	t Und	der th	e Part	70 Pe	ermit	
65		-			ors and thermal ox				-		-		-						-							
66		Methodology						,			,,.															
67		Nox and CO:																								
68	` '			= [Unco	ntrolled Emission	Fact	or (lb/MMBtu) x D	esian Firina Rate	MMBtu/hr)1																	
69				_	controlled Emission		•			/ 2.00	0 lb/ton1															
70		SO2:	(•			(,		(,	,																
71			PTE (lb/hr) =	= [Uncoi	ntrolled Emission	Fact	tor (lb/ton DDG) x	Production Rate (1	on/hr)]																	
72				-	controlled Emission					00 lb/1	on]															
73		VOC, PM/PI		•			. ,		, ,		-															
74				= [Uncoi	ntrolled Emission	Fact	tor (lb/ton DDG) x	Production Rate (1	on/hr)]																	
75			,	-	controlled Emission		,	•	/ -	00 lb/t	on]															
76		Controlled P	TE (lb/hr) = [l	Uncontr	rolled Emission Ra	ate (I	b/hr) x (1 - Contro	Efficiency)]																		
77	•	Controlled P	TE (ton/yr) =	[Uncon	ntrolled Emission F	Rate	(ton/yr) x (1-Contr	ol Efficiency)]																		
78	1	HAPs (lb/ton	emission fac	ctor):																						
79	I	Uncontrolled	PTE (lb/hr) =	= [Unco	ntrolled Emission	Fact	tor (lb/ton DDG) x	Production Rate (1	on/hr)]																	
80	I	Uncontrolled	PTE (ton/yr)) = [Unc	controlled Emission	n Fa	ctor (lb/ton DDG)	x Production Rate	(ton/yr) / 2,0	00 lb/1	on]															
81			. , -		rolled Emission Ra		, .	- / -																		
82				-	ntrolled Emission F	Rate	(ton/yr) x (1-Contr	ol Efficiency)]																		
83		•	/Icf emission																							
84					2, Chapter 1.4, Ta				02, 1-01-00	5-02, <i>1</i>	1-03-006-	·02, an	d 1-0	3-006-	03											
85		Emission (to	ns/yr) = Thro	ughput	(MMCF/yr) x Emis	ssior	n Factor (Ib/MIMICE	·)/2,000 lb/ton																		
86 87 Gree		O O.l	Jationa																							
88 Gree	ennous	e Gas Calcu	<u>liations</u>																							
89				Г			Greenhouse Gas		1																	
90		***************************************	***************************************		CO2	<u> </u>	CH4	N2O	1																	
	ccion F	actor in lb/MI	Mof		120,000		2.3	2.2																		
92	33101111	actor in ib/ivir	VICI		120,000		2.3	2.2																		
93						\dashv			1																	
	ential Fr	nission in tor	ns/vr		27,311		0.52	0.50																		
95	, , , , , , , , , , , , , , , , , , ,	111001011111101	10/ 91		2.,,0,,		0.02	0.00																		
96								ı	1																	
 	nmed Po	otential Emis	sions in tons/	/yr			27,312																			
98							,																			
99									1																	
100 CO2	2e Total	l in tons/yr					27,473																			
101					1																					
102																										
103 Meth	-																									
					s 2.2. The N2O E																					
<u> </u>			•		I-2 SCC #1-02-006			3-006-02, and 1-0	3-006-03.																	
		•	` ,		ole A-1 of 40 CFR		•																			
<u></u>					x Emission Facto				14 014/0 (00)		_															
108 002	e (tons	/yr) = CO2 P	otentiai Emis	sion to	n/yr x CO2 GWP	(1) +	CH4 Potential Er	nission ton/yr x CF	14 GVVP (25)) + N2	<u> </u>															

	АВ	C D	Е	F	G	Н		J	К	L	М	N	0	Р	
1		<u> </u>			Appendix	A: Emissions Calculations			<u> </u>	<u> </u>			L	!	
2						Wet Pad (EU-40)									
3															
4				Compa	ıny Name:	MGPI of Indiana, LLC									
5					Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025									
6		Signific	ant Sour	e Modific	ation No.:	0296-35496-00005									
7		Signific	ant Pern	nit Modific	ation No.:	029-35505-00005									
8					Reviewer:	Kristen Willoughby									
9					Date:	12/22/2014									
10			***************************************					000000000000000000000000000000000000000		***************************************	000000000000000000000000000000000000000		000000000000000000000000000000000000000	***************************************	000000000000000000000000000000000000000
11			1	ontrolled Emission		0.0083	0.0	001	0.0	0002	0.0	0002	0.0	0004	Tota
12 13	Emission Unit	Emission Point ^(a)	1	Eactors ^(b)		lb/ton wet cake	lb/ton v	vet cake	lb/ton	wet cake	lb/ton v	vet cake	lb/ton v	wet cake	Emis
L		Limbsion i ome		Feed ^(c)		VOC ^(d)	Acetalo	lehyde ^(d)	Acre	olein ^(d)	Forma	ldehyde ⁽	Meth	anol ^(d)	
14			(ton/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	(lb/hr)
15	EU-40	Wet Cake Production, Storage, and Loadout	24.56	215,154	0.20	0.89	0.002	0.0108	0.0005	0.0022	0.005	0.022	0.001	0.0043	0.009
16 17 18 19 20 21 22 23	(b) Emission fa (c) Hourly drye (d) Methodolog Emission ra	actor for wet cake taken er feed is maximum as t gy and Sample Calcula ate (lb/hr) = Dryer Feed	from a sir aken from ions: (ton/hr) X	nilar opera the mater Wet Cake	ition permitti ial balance Emission f	up and shutdown, when the dryer throughput may be diver ed in Indiana under Permit #T095-30443-00127 (POET E provided by ICM dated 1/30/2015. factor (Ib/ton) factor (Ib/ton) x ton/2,000 Ib		-		et feed is	not sent	to dry sto	rage.		

	R
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	I HAP
12	sions
13	
14	(ton/yr)
15	0.0387
16	
17	
18	
19	
20	
21	
22	
23	

10		А	В	С
3	1			
A	2			
A	3			
Sign	4			
Sign	5			
Source	6			Signi
Source	7			Sign
10 11 EU-41 through EU-43, EU-45, EU-61 Tanks and Bottling Operations	8			
12 13	9			
Source	10			
EU-41 (Wine Room)	11	EU-41 through EU-43, EU-45, EU-61 Tanks and Bottling Operations		
EU-41 (Wine Room)				
EU-41 (Wine Room)				
EU-41 (Wine Room)	12		Source	
EU-42 (Tank Farm)	13			
EU-43 (Bldg 88)				
EU-61 (Whiskey System) EU-61 (Gin System) EU-61 (Gin System) Total Methodology: From Permit No. 24407: Emission Factors based on source estimates. No AP-42 or FIRE emission factors are available Emissions (ton/yr) = Maximum usage (pg/yr)1,000 x EF (lb/1,000 gal) / 2,000 lb/ton Emissions (lb/hr) = Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr EU-71 through EU-76 Warehouse Emissions Source EU-71 through EU-76 Methodology: Emission factor taken from AP-42 Table 9.12.3-1				
EU-61 (Whiskey System) EU-61 (Gin System) EU-61 (Gin System) Total Methodology: From Permit No. 24407: Emission Factors based on source estimates. No AP-42 or FIRE emission factors are available Emissions (ton/yr) = Maximum usage (pg/yr)1,000 x EF (lb/1,000 gal) / 2,000 lb/ton Emissions (lb/hr) = Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr EU-71 through EU-76 Warehouse Emissions Source EU-71 through EU-76 Methodology: Emission factor taken from AP-42 Table 9.12.3-1	16			
Total Methodology: Methodology: From Permit No. 24407: Emission Factors based on source estimates. No AP-42 or FIRE emission factors are available Emissions (ton/yr) = Maximum usage (pg/yr)/1,000 x EF (lb/1,000 gal) / 2,000 lb/ton Emissions (ton/yr) = Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr EU-71 through EU-76 Warehouse Emissions Source EU-71 through EU-76 Warehouse Emissions Wethodology: Emission factor taken from AP-42 Table 9.12.3-1	17		EU-61 (Whiskey System)	
Methodology: Methodology: From Permit No. 24407: Emission Factors based on source estimates. No AP-42 or FIRE emission factors are available Emissions (ton/yr) = Maximum usage (pg/yr)/1,000 x EF (lb/1,000 gal) / 2,000 lb/ton Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr	18		EU-61 (Gin System)	
Methodology: From Permit No. 24407: Emission Factors based on source estimates. No AP-42 or FIRE emission factors are available Emissions (ton/yr) = Maximum usage (pg/yr)/1,000 x EF (lb/1,000 gal) / 2,000 lb/ton Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr	19		Total	
From Permit No. 24407: Emission Factors based on source estimates. No AP-42 or FIRE emission factors are available Emissions (ton/yr) = Maximum usage (pg/yr)/1,000 x EF (lb/1,000 gal) / 2,000 lb/ton Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr EU-71 through EU-76 Warehouse Emissions Source EU-71 through EU-76 Warehouse Emissions Methodology: Emission factor taken from AP-42 Table 9.12.3-1	20			
Emissions (ton/yr) = Maximum usage (pg/yr)/1,000 x EF (lb/1,000 gal) / 2,000 lb/ton Emissions (lb/hr) = Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr Emissions (lb/hr) = Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr Source EU-71 through EU-76 EU-71 through EU-76 EU-71 through EU-76 Emission factor taken from AP-42 Table 9.12.3-1	21	Methodology:		
Emissions (lb/hr) = Emissions (ton/yr) x 2,000 lb/ton / 8,760 hr/yr	22		From Permit No. 24407: Emission Factors based on source estimates. No AP-42 or FIRE emission factors are available	
25 EU-71 through EU-76 Warehouse Emissions 27 Source 28 EU-71 through EU-76 Warehouse Emissions EU-71 through EU-76 Warehouse Emissions Source EU-71 through EU-76 EU-71 through EU-76 Emission factor taken from AP-42 Table 9.12.3-1			Emissions (ton/yr) = Maximum usage (pg/yr)/1,000 x EF (lb/1,000 gal) / 2,000 lb/ton	
EU-71 through EU-76 Warehouse Emissions Source EU-71 through EU-76 Warehouse Emissions Source EU-71 through EU-76 Wethodology: Emission factor taken from AP-42 Table 9.12.3-1			Emissions (lb/hr) = Emissions (ton/yr) \times 2,000 lb/ton / 8,760 hr/yr	
Source EU-71 through EU-76 EU-71 through EU-76 Emission factor taken from AP-42 Table 9.12.3-1				
EU-71 through EU-76 But Public EU-71 through EU-76 Emission factor taken from AP-42 Table 9.12.3-1	26	EU-71 through EU-76 Warehouse Emissions		
EU-71 through EU-76 But Public EU-71 through EU-76 Emission factor taken from AP-42 Table 9.12.3-1				
EU-71 through EU-76 Second	27		Source	
29 30 Methodology: Emission factor taken from AP-42 Table 9.12.3-1				
30 Methodology: 31 Emission factor taken from AP-42 Table 9.12.3-1				***************************************
Emission factor taken from AP-42 Table 9.12.3-1		Methodology:		
Emissions (tonky) = # horrole v EE (th/horroll/w) / 0.000 th/hor		······································	Emission factor taken from AP-42 Table 9.12.3-1	
EMISSIONS (LON/VI) - # DATTEIS X EF (LD/DATTEI/VI) / Z.UUU ID/TON	32		Emissions (ton/yr) = # barrels x EF (lb/barrel/yr) / 2,000 lb/ton	

	D	Е	F	G	
1		Appendix A: I	Emissions Calculations		
2			Summary of Emissions		
3					
4	Coi	mpany Name:	MGPI of Indiana, LLC		
5			7 Ridge Avenue, Lawrenceburg, Indiana 47025		
6	ficant Source Mod	dification No.:	0296-35496-00005		
7	ificant Permit Mod	dification No.:	029-35505-00005		
8		Reviewer:	Kristen Willoughby		
9		Date:	12/22/2014		
10					
11					
		VOC Emission		voc	
	Maximum Usage	Factor	VOC Emissions	Emissions	
12	(PG/yr)	(lb/1000 gal)	(lb/hr)	(ton/yr)	
13	32,000,000	1.22	4.46	19.5	
14	30,000,000 1.27		4.34	19.0	
15	14,000,000			4.69	
16	10,000,000	10,000,000 0.718 0.82		3.59	
17	13,000,000	13,000,000 0.95 1.41			
18	12,775,000	0.913	1.33	5.83	
19			13.43	58.8	
20				nechannennannannannannannannannannannan	
21					
22					
23					
24					
25					
26	***************************************				
	Emission Factor		VOC Emissions	VOC Emissions	
27	(lb/barrel/yr)	# Barrels	(lb/yr)	(ton/yr)	
28	6.9	541278	3,734,818	1,867	
29			1		
30					
31					
32					

	А	В	С	D	E	F	G	Н	
1		<u> </u>	.4		Appendix A: Emissions Calculations				
2					Rail Car and Truck Loading Emissions.				
3									
4				Company Name:	MGPI of Indiana, LLC				
5				Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025				
6		Sig	gnificant Source	Modification No.:	0296-35496-00005				
7		S	ignificant Permit	Modification No.:	029-35505-00005				
8				Reviewer:	Kristen Willoughby				
9				Date:	12/22/2014				
10									
11	EU-46 Rail	Car and Truck Load	ding Emissions					_	
12				-	Loading Properties ^(a)		Throughput ^(b)		
	En	nission Point	Loading	Loading	Vapor Pressure	Vapor Molecular	Annual		
13			Temperature (F)	Temperature (R)	(psi)	Weight	(1,000 gal/yr)		
14	Rail Car	and Truck Loading	62	521.67	0.689	(lb/lb-mol) 46	29,450		
15		**************************************		1 22	1 0.000			ı	
16	000000000000000000000000000000000000000				Uncontrolled	1			
	_		Saturation	Loading Loss ^(d)					
17	En	nission Point	Factor ^(c)	(lb/10 ³ gal)	VOC Emissions ^(e)				
18									
19	Rail Car	and Truck Loading	0.6	0.454	6.69				
20		Total			6.69				
21						_			
	Methodolo								
23		Vapor pressure and r Antoine's Coefficients			erial property information for ethanol.				
24		Antome's Coemicients	A =	5.37229	C)]; P in bar, T in K				
26			B =	1670.409					
27			C =	-40.191					
25 26 27 28 29				289.667	K				
30			P = P =	0.047 0.689	bar				
31	(b)	Maximum annual pro		31,000,000	psi gal/yr				
	(~)	man pro		,,	Product proof:	190	proof		
33					Product Ethanol concentration:		-		
32 33 34 35	7-5	Caturation forton	andama are est at at at		Maximum annual Ethanol throughput:	29,450,000	gal/yr		
36			•	_	from Section 5.2 of AP-42, Fifth Edition, Volume 1.				
37	(d) Loading loss estimate calculated according to the methodology in Section 5.2 of AP-42, Fifth Edition, Volume 1. Sample Calculation, average loading loss:								
38									
39	M = Vapor Molecular Weight (lb/lb-mol)								
40				P = Vapor Pressu					
41				T = Loading Temp	perature (R)				
40 41 42 43		1 -		(12 48) (0.6) (46 lh/lh-mal) (0.689 hai)	***	0.454	lb / 10³ gal	
43		L _L =		(12.40) (0.6) (46 lb/lb-mol) (0.689 psi) 521.67 R	- -	0.404	io gai	
45									
44 45 46 47				ading loss to the ap	oplicable loading throughput.				
47		sample calculation, a	nnual emissions:						

	A	В	С	D	Е	F	G	Н	
48			0.454 lb	29,450 x1,000 gal	ton	***	6.69	<u>ton</u>	
49			1000 gal	yr	2,000 lb			yr	
50									
51									
		НАР	Product	HAP Fraction	Uncontrolled PTE HAP (ton/yr)				
52									
53		Acetaldehyde 1	ethanol	1.00E-03	6.69E-03				
54		Methanol ²	ethanol	5.00E-03	3.34E-02				
55		Formaldehyde 1	ethanol	1.00E-03	6.69E-03				
56		Total			4.68E-02				
57	1. Acetaldehyde and Formaldehyde are estimated to be at trace levels in ethanol. It will conservatively assume that these trace levels do not exceed 1000 ppm in the ethanol product.								
58		2. Methanol concentra	ation is based on	maximum weight pe	ercent of 0.5% as per ASTM D 4806				
59		Note: HAP emission i	ates based on pe	rformance tests at s	imilar facilities.				

	A	В	С	D	Е	F	G
1				Appendix A: Emis	sions Calculation	ıs	
2				Equipment L	eak Fugitive Emis	ssions	
3							
4				Company Name:	MGPI of Indiana,	LLC	
5				Address:	7 Ridge Avenue,	Lawrencebu	ırg, Indiana
6		Sign	ificant Source	Modification No.:	0296-35496-0000	5	
7		Sigr	nificant Permi	t Modification No.:	029-35505-00005		
8				Reviewer:	Kristen Willough	by	
9				Date:	12/22/2014		
10							
11	EU-81 Equipment Leak Fugitive Emissions						
				pm * * pm 4		Voc	Voc
12		Component	Count	Emission Factor (lb/hr/component)	% voc	(lb/hr)	Emissions (ton/yr)
12 13		Component Pumps	Count 124	0.0439	60%	3.27	14.31
14		Valves	4,481	0.0089	60%	23.93	104.81
15		Flanges	6,940	0.0005	60%	2.08	9.12
16		i idiigoo	0,040	0.0000	Total	29.28	128.23
17			000000000000000000000000000000000000000	000000000000000000000000000000000000000	10tai	40.40	120.20
18	Methodology:						
19	4	Component counts ba	ased on facility e	stimates. Counts exclud	de components within	former	
20		•	=	vned or operated by MG	•	TOTTIO	
21			-	n from "Protocol for Equ		n Estimates"	
22		EPA-453/R-95-017, N			inprinorit Educ Entrodor	, Estimates	
23				F (lb/hr/component) x %	6 VOC		
24		, ,	•	x 8,760 hr/yr / 2,000 lb			
25			,	, , ,			
26		Total Fugitive VOCs	(ton/yr)			128.23	
) Frantian	Fugitive HAP E	missions	
27		HAP	ПАІ	P Fraction	(tons/y	r)	
28		Acetaldehyde ¹	1	.00E-03	1.28E-0)1	
29		Methanol ²	5	.00E-03	6.41E-0)1	
30		Formaldehyde ¹	1	.00E-03	1.28E-0	01	
31	<u>.</u> j	Total			0.90		
				timated to be at trace levelopm ppm in the ethanol produc		vatively assume	-
32	_					6	
33		Z. Methanol Concentratio	m is pased on max	dimum weight percent of 0.	.0 /0 ds pei ASTIVI D 460		

	А	В	С	D	Е	F	G
34	Fugitive HAP Emissions (tons/yr) = VOC (tons/yr) x HAP Fraction						

1_11			_				
A BC	D	E	Appendix A: Emission Calculations	G	Н	<u> </u>	J
2			Natural Gas Combustion Only				
			-				
<u>3 </u>		Common Monor	Utility Boiler				
			MGPI of Indiana, LLC				
5			7 Ridge Avenue, Lawrenceburg, Indiana 47025				
5		Significant Source Modification No.:					
7		Significant Permit Modification No.:					
3			Kristen Willoughby				
9		Date:	12/22/2014				
0	.						
	Potential Throughpu	t					
2 MMBtu/hr	MMCF/yr						
3	0005.5						
4 244.0	2095.5						
5							
6				Pollutant	**************************************	processoro	
7	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
8 Emission Factor in lb.	1.9	7.6	7.6	0.6	280.0	5.5	84.0
9					**see below		
0							ن ند ند
1 Potential Emission in	1.99	7.96	7.96	0.63	293.4	5.76	0.88
2			11 2000				
		M10 emission factor is condensable and filte	erable PM10 combined.				
		filterable PM2.5 combined.					
	NOx: Uncontrolled =	= 280 (pre-NSPS) or 190 (post-NSPS), Low	NOx Burner = 140, Flue gas recirculation = 100 (See Tab	le 1.4-1)			
6							
7 Methodology							
Q All amiceian factors are							
	based on normal fi						
9 MMBtu = 1,020,000 E							
9 MMBtu = 1,020,000 E 0 MMCF = 1,000,000 Cu							
9 MMBtu = 1,020,000 t 0 MMCF = 1,000,000 Cu 1 Potential Throughput (M	IMCF) = Heat Input (Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMC					
9 MMBtu = 1,020,000 E 0 MMCF = 1,000,000 Cu 11 Potential Throughput (M 12 Emission Factors from	IMCF) = Heat Input (AP 42, Chapter 1.4,	Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMC Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0					
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from A (AP-42 Supplement D 3	IMCF) = Heat Input (AP 42, Chapter 1.4,	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0					
9 MMBtu = 1,020,000 E 0 MMCF = 1,000,000 Cu 1 Potential Throughput (M 2 Emission Factors from 3 (AP-42 Supplement D 3 4 Emission (tons/yr) = The	IMCF) = Heat Input (AP 42, Chapter 1.4,						
9 MMBtu = 1,020,000 E 0 MMCF = 1,000,000 Cu 1 Potential Throughput (M 2 Emission Factors from 3 (AP-42 Supplement D 3 4 Emission (tons/yr) = The	IMCF) = Heat Input (AP 42, Chapter 1.4,	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0	006-01, 1-01-006-04				
9 MMBtu = 1,020,000 E 0 MMCF = 1,000,000 Cu 1 Potential Throughput (M 2 Emission Factors from A 3 (AP-42 Supplement D S 4 Emission (tons/yr) = The 5	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr)	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton	006-01, 1-01-006-04 HAPs - Organics				
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from a (AP-42 Supplement D : Emission (tons/yr) = The Company of the company of the	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene	006-01, 1-01-006-04 HAPs - Organics Formaldehyde	Hexane	Toluene		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr)	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton	006-01, 1-01-006-04 HAPs - Organics	Hexane 1.8E+00	Toluene 3.4E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from a (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene	006-01, 1-01-006-04 HAPs - Organics Formaldehyde	1			
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from a (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene	006-01, 1-01-006-04 HAPs - Organics Formaldehyde	1			
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from (AP-42 Supplement D : Emission (tons/yr) = The Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene	006-01, 1-01-006-04 HAPs - Organics Formaldehyde	1			
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from a (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb. Potential Emission in	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03	HAPs - Organics Formaldehyde 7.5E-02	1.8E+00	3.4E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Potential Emission in	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02	1.8E+00	3.4E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb. Potential Emission in	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03	HAPs - Organics Formaldehyde 7.5E-02	1.8E+00	3.4E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from a (AP-42 Supplement D companies of the companies of	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02	1.8E+00	3.4E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from (AP-42 Supplement D : Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Potential Emission in	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals	1.8E+00 1.89E+00	3.4E-03 3.56E-03	Total HAPs	
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Potential Emission in Emission Factor in lb. Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium	1.8E+00 1.89E+00 Manganese	3.4E-03 3.56E-03 Nickel	Total HAPs	
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from a (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Potential Emission in Emission Factor in lb. Emission Factor in lb. Emission Factor in lb. Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium	1.8E+00 1.89E+00 Manganese	3.4E-03 3.56E-03 Nickel	Total HAPs	
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Emission Factor in lb. Emission Factor in lb. Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium	1.8E+00 1.89E+00 Manganese	3.4E-03 3.56E-03 Nickel	Total HAPs	
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Emission Factor in lb. Potential Emission in Potential Emission in	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 t MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from (AP-42 Supplement D : Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Emission Factor in lb. Potential Emission in Emission Factor in lb. Potential Emission in December 2	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Emission Factor in lb. Potential Emission in Potential Emission in	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from a (AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Emission Factor in lb. Potential Emission in The five highest organic	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04 5.24E-04	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03 1.15E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from AP-42 Supplement D S Emission (tons/yr) = The BEMISSION Factor in Ib. Potential Emission in CE Emission Factor in Ib. CE The five highest organic Additional HAPs emission	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04 5.24E-04	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 t MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from AP-42 Supplement D (Emission (tons/yr) = The Emission Factor in lb. Co Di	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04 5.24E-04	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03 1.15E-03 mission factors are provided above. able in AP-42, Chapter 1.4.	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03 1.47E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from AP-42 Supplement D S Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Emission Factor in lb. Potential Emission in Emission Factor in lb. The five highest organic Additional HAPs emission Additional HAPs emission	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04 5.24E-04	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03 1.15E-03 mission factors are provided above. able in AP-42, Chapter 1.4. Greenhouse	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03 1.47E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 t MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from AP-42 Supplement D 3 Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Emission Factor in lb. Potential Emission in The five highest organic Additional HAPs emission Additional HAPs emission	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04 5.24E-04 c and metal HAPs erron factors are availated to the control of the control	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03 1.15E-03 mission factors are provided above. able in AP-42, Chapter 1.4. Greenhouse CH4	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03 1.47E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 t MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from A AP-42 Supplement D (Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Emission Factor in lb. Potential Emission in The five highest organic Additional HAPs emission Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04 5.24E-04	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03 1.15E-03 mission factors are provided above. able in AP-42, Chapter 1.4. Greenhouse	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03 1.47E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from AP-42 Supplement D S Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Emission Factor in lb. Emission Factor in lb. Potential Emission in The five highest organic Additional HAPs emission Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04 5.24E-04 c and metal HAPs erron factors are availated to the control of the control	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03 1.15E-03 mission factors are provided above. able in AP-42, Chapter 1.4. Greenhouse CH4	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03 1.47E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from A (AP-42 Supplement D S Emission Factor in lb. Emission Factor in lb. Potential Emission in Emission Factor in lb. The five highest organic Additional HAPs emission Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04 5.24E-04 c and metal HAPs erron factors are availated as a contractor of the contractor of	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03 1.15E-03 mission factors are provided above. able in AP-42, Chapter 1.4. Greenhouse CH4 2.3	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03 1.47E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
9 MMBtu = 1,020,000 E 0 MMCF = 1,000,000 Cu 1 Potential Throughput (M 2 Emission Factors from 3 3 (AP-42 Supplement D 3 4 Emission (tons/yr) = The 5 6 Potential Emission in 2 3 Potential Emission in 2 3 Emission Factor in lb. 9 9 Potential Emission in 2 1 The five highest organic 3 Additional HAPs emission 4 5 Emission Factor in lb. 8 9 Potential Emission in 9 1 Potential Emission in 9 1 Potential Emission in 9 2 Potential Emission in 9 3 Potential Emission in 9 4 Potential Emission in 9 5 Potential Emission in 9 6 Potential Emission in 9 7 Potential Emission in 9 7 Potential Emission in 9 8 Potential Emission in 9 9 Potential Emission in 9 9 Potential Emission in 9 9 Potential Emission in 9	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04 5.24E-04 c and metal HAPs erron factors are availated to the control of the control	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03 1.15E-03 mission factors are provided above. able in AP-42, Chapter 1.4. Greenhouse CH4	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03 1.47E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		
MMBtu = 1,020,000 E MMCF = 1,000,000 Cu Potential Throughput (M Emission Factors from A A Emission (tons/yr) = The Emission Factor in lb. Potential Emission in Emission Factor in lb. Potential Emission in The five highest organic Additional HAPs emission Emission Factor in lb.	IMCF) = Heat Input (AP 42, Chapter 1.4, roughput (MMCF/yr) Benzene 2.1E-03 2.20E-03 Lead 5.0E-04 5.24E-04 c and metal HAPs erron factors are availated as a contractor of the contractor of	Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-0 x Emission Factor (lb/MMCF)/2,000 lb/ton Dichlorobenzene 1.2E-03 1.26E-03 Cadmium 1.1E-03 1.15E-03 mission factors are provided above. able in AP-42, Chapter 1.4. Greenhouse CH4 2.3	HAPs - Organics Formaldehyde 7.5E-02 7.86E-02 HAPs - Metals Chromium 1.4E-03 1.47E-03	1.8E+00 1.89E+00 Manganese 3.8E-04	3.4E-03 3.56E-03 Nickel 2.1E-03		

	Α	ВС	D	E	F	G	Н	l	J	
63	Summed Potential	l Emissio	ons in tons/yr	125,736						
64										
65										
66	CO2e Total in tons	s/yr		126,479						
67										
68										
69	Methodology									
70	The N2O Emission	Factor fo	or uncontrolled is 2	2.2. The N2O Emission Factor for low NOx burne	r is 0.64.					
71	Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.									
72	Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A									
73	Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton									
74	CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).									

A B C D E F G H	VOC 5.5	CO 84
Natural Gas Combustion Only Utility Boiler	VOC 5.5 v	84
Company Name: MGPI of Indiana, LLC	VOC 5.5 v	84
Company Name: MGPI of Indiana, LLC	VOC 5.5 v	84
Address: 7 Ridge Avenue, Lawrenceburg, Indiana 4 Significant Source Modification No.: 0296-35496-00005	VOC 5.5 v	84
Significant Source Modification No.: 0296-35496-00005	VOC 5.5 v	84
Significant Permit Modification No.: 029-35505-00005 Reviewer: Kristen Willoughby Date: 12/22/2014	5.5 v 1.12	84
Reviewer: Kristen Willoughby Date: 12/22/2014	5.5 v 1.12	84
Potential Emission Factor in Ib/MMCF Potential Emission from Unre 0.13 Potential Emission factor is filterable and condensable PM2.5 combined.	5.5 v 1.12	84
10	5.5 v 1.12	84
MMBtu	5.5 v 1.12	84
13	5.5 v 1.12	84
14	5.5 v 1.12	84
15 16 17 Unrecognized Fuel Oil usage HHV MMBtu MMCF/yr MMCF/yr MMBtu MMCF/yr MMCF/yr MMBtu/yr MMCF MMCF MMCF/yr MMCF MMCF MMCF/yr MMCF MMCF/yr MMCF MMCF MMCF/yr MMCF MMC	5.5 v 1.12	84
16 17 Unrecognized Fuel Oil usage HHV MMBtu MMCF/yr 19 MMBtu/yr MMcf 20	5.5 v 1.12	84
17	5.5 v 1.12	84
Heat Input Capacity MMBtu MMCF/yr 19	5.5 v 1.12	84
19	5.5 v 1.12	84
140736.0 1020 138.0	5.5 v 1.12	84
21 22 23 Pollutant Polluta	5.5 v 1.12	84
22 23 Potential Emission from Unre 0.13 0.52 0.52 0.04 0.90	5.5 v 1.12	84
PM* PM10* direct PM2.5* SO2 NOX Emission Factor in lb/MMCF 1.9 7.6 7.6 0.6 100 **see below Potential Emissions from Unre 0.13 0.52 0.52 0.04 6.90 Potential Emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 emission factor is filterable and condensable PM2.5 combined.	5.5 v 1.12	84
Emission Factor in Ib/MMCF 1.9 7.6 7.6 0.6 100 **see below 27 Potential Emission in 1 0.39 1.55 1.55 0.12 20.4 29 30 Potential Emissions from Unre 0.13 0.52 0.52 0.04 6.90 31 Fuel Oil consumption 32 *PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM2.5 combined.	5.5 v 1.12	84
26 27 28 Potential Emission in 1 0.39 1.55 1.55 0.12 20.4	1.12	
Potential Emission in 1 0.39 1.55 1.55 0.12 20.4 Potential Emissions from Unre 0.13 0.52 0.52 0.04 6.90 Tuel Oil consumption 0.13 emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 emission factor is filterable and condensable PM2.5 combined.	1.12	17.2
Potential Emission in 1 0.39 1.55 1.55 0.12 20.4 30 Potential Emissions from Unre 0.13 0.52 0.52 0.04 6.90 31 Fuel Oil consumption 2 *PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. 32 *PM2.5 emission factor is filterable and condensable PM2.5 combined.		17.2
29 30 Potential Emissions from Unre 0.13 0.52 0.52 0.04 6.90 31 Fuel Oil consumption 32 *PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. 33 PM2.5 emission factor is filterable and condensable PM2.5 combined.		17.2
30 Potential Emissions from Unre 0.13 0.52 0.52 0.04 6.90	0.38	
31 Fuel Oil consumption	0.30	EON
32 *PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. 33 PM2.5 emission factor is filterable and condensable PM2.5 combined.		5.80
33 PM2.5 emission factor is filterable and condensable PM2.5 combined.		
35		
36 Methodology		
37 All emission factors are based on normal firing.		
38 MMBtu = 1,000,000 E		
39 MMCF = 1,000,000 Cubic Fee		
40 Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-02	03	
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu		
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton		
43 HARS Coloulations		
44 HAPS Calculations 45		
45 HAPs - Organics		1
47 Benzene Dichlorobenzene Formaldehyde Hexane Toluene	Total - Organics	1
47	i otai - Organics	
49 1.5E-02 1.6E 00 3.4E-03		
50		1
51 Potential Emission in 4.292E-04 2.453E-04 1.533E-02 3.679E-01 6.950E-04	3.846E-01	
52		
53	······································	-
54 HAPs - Metals]
55 Lead Cadmium Chromium Manganese Nickel	Total - Metals]
56 Emission Factor in lb/l 5.0E-04 1.1E-03 1.4E-03 3.8E-04 2.1E-03		
57]
58		
59 Potential Emission in 1 1.022E-04 2.248E-04 2.862E-04 7.767E-05 4.292E-04	1.120E-03	
60	1.1202 00	

	Α	В	С	D	E	F	G	Н	I	J		
61				4				Total HAPs	3.857E-01			
62	Methodology is th	e san	ne as al	t				Worst HAP	3.679E-01			
63								Roccossococcoccoccoccoccoccoccoccoccoccoc	***************************************	Resona		
64	The five highest o	ve highest organic and metal HAPs emission factors are provided above.										
65	Additional HAPs e	ional HAPs emission factors are available in AP-42, Chapter 1.4.										
66												
67	Greenhouse Ga	<u>s Cal</u>	culatio	ons								
68												
69					Greenhouse Gas	000000000000000000000000000000000000000						
70				CO2	CH4	N2O						
	Emission Factor i	n lb/		120,000	2.3	2.2						
72												
73												
	Potential Emissio	n in i		24,528	0.5	0.4						
75												
76	Summed Potentia	l Emic	vojene j	n tono hir	24,529							
78	Summed Fotentia	1 = 1188	5510115 1		24,329							
79												
	CO2e Total in tor	s/vr			24,674							
81	o o moral in ton	.c, y.			21,01							
82				<u> </u>								
	Methodology											
84	The N2O Emission	Facto	r for un	controlled is 2.2.	The N2O Emission Factor for low NOx burner is	0.64.						
85	Emission Factors a	re fro	m AP 42	2, Table 1.4-2 SCC	#1-02-006-02, 1-01-006-02, 1-03-006-02, and	d 1-03-006-03.						
86	Global Warming Po	obal Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.										
1	1	ssion (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton										
88	CO2e (tons/yr) = C	02 P	otential l	Emission ton/yr x (CO2 GWP (1) + CH4 Potential Emission ton/yr:	x CH4 GWP (25) + N2C	Potential E	mission ton/yr x				

	T		T		T	т	
A B C	Appendix A:	Emissions Calculations	F F	G	<u> </u> H	<u> </u>	J
2 Commercial/Institutional/Residential Combustors (< 100 MMBtu/hr)	Appendix A.	Limbsions Calculations					
3		#1 and #2 Fuel Oil					
4 Cor		MGPI of Indiana, LLC					
5		7 Ridge Avenue, Lawrenceburg, Indiana 47025					
5 6 7 Significant Source Mod 8 9							
8 Significant Permit Mod		Kristen Willoughby					
9		12/22/2014					
10							
11 Heat Input Capotential Throughput		Limited Throughput				S = W	
12 MMBtu/hr kgals/year		kgals/yr				0.3	
13		4040					
14 45.6 15		1848					
16 Unrecognized	Unrecognized	1					
17 Fuel Oil usage	Heat Input Ca						
18 (kgals/year)	MMBtu/yr						
19 1005.3	140736.0						
20							
21				D-8 (/			
22 23	DM#	DM40	direct DMO 5	Pollutant	NO	1,400	
23 24 Emission Fac	PM* 2.0	PM10 2.3	direct PM2.5 1.55	SO2 42.6	NOx 20.0	VOC 0.20	5.0
25	2.0	2.3	1.55	(142.0S)	20.0	0.20	3.0
26 Limited Emission Factor in lb/kgal				43.00			
27							
28 Potential Emission in tons/yr	2.85	3.28	2.21	60.8	28.5	0.29	7.1
29 Limited Emissions from fuel oil in tons/yr	1.85	2.13	1.43	39.7	18.5	0.185	4.62
30							
31 Methodology							
32 1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu 33 Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal	nor 1000 mallor	a v. 1 mar O 1 10 MM Dtu					
33 Potential Infougnput (kgals/year) = Heat input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal 34 Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, 1.3-3 and 1.3-6 (SCC 1-02-005-01/							
35 *PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal.	02/03) Supplen	Herit E 9/90 (See erata me)					
36 Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton							
37							
38	***************************************	HAPs - Metals		***************************************	***************************************	7	
39	Arsenic	Beryllium	Cadmium	Chromium	Lead		
Emission Factor in Ib/MMBtu	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06		
41							
42 A3 Retential Emission in tons/vr	7.005.04	5.005.04	E 00E 04	E 00E 04	1 905 03		
43 Potential Emission in tons/yr 44	7.99E-04	5.99E-04	5.99E-04	5.99E-04	1.80E-03		
45	-				1	_	
46		HAPs - Metals (continued)			1		
47	Mercury	Manganese	Nickel	Selenium	1		
48 Emission Factor in lb/MMBtu	3.0E-06	6.0E-06	3.0E-06	1.5E-05			
49							
50					Total		
51 Potential Emission in tons/yr	5.99E-04	1.20E-03	5.99E-04	3.00E-03	9.8E-03		
52							
53 54 Methodolog							
54 Methodolog 55 No data was available in AP-42 for organic HAPs.							
56 Potential Emissions (tons/year) = Throughput (MMBtu/hr)*Emission Factor (lb/MMBtu)*8,70	60 hrs/vr / 2.00	0 lb/ton					
57	,,						
58		Greenhouse Gas					
59	CO2	CH4	N20				
60 Emission Fac	22,300	0.052	0.26				
61							
62 Retential Emission in tone/vr	04.04.4		0.4				
Potential Emission in tons/yr 64	31,814	0.1	0.4				
65		1		-			
66 Summed Potential Emissions in tons/yr		31,814					
67		- 11- 1					
68							
69 CO2e Total in tons/yr		31,926					
70							
71 Methodolomi							
72 Methodology 73 The CO2 Emission Factor for #4 First Oil is 24500. The CO2 Emission Factor for #3 First Oil is 23300.							
73 The CO2 Emission Factor for #1 Fuel Oil is 21500. The CO2 Emission Factor for #2 Fuel Oil is 22300. 74 Emission Factors are from AP 42, Tables 1.3-3, 1.3-8, and 1.3-12 (SCC 1-02-005-01/02/03) Supplement E 9/99	(see erata file)						
75 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.	(occ crata me)						
1 1							
76 Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton							

	D	E
1		Appendix A: Emission Calculations
2		Large Reciprocating Internal Combustion Engines - Diesel Fuel
3		Emergency Generator
4		
5	Company Name:	MGPI of Indiana, LLC
6	Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025
7	Significant Source Modification No.:	0296-35496-00005
8	Significant Permit Modification No.:	029-35505-00005
9	Reviewer:	Kristen Willoughby
10	Date:	12/22/2014

I A	В	С	D	E	F	G			
	issions calculated based	on output rating (hp)	-						
13									
14		Output Horsepower Rating (hp)	1600.0						
15		Maximum Hours Operated per Year	500						
16		Potential Throughput (hp-hr/yr)	800,000						
17		Sulfur Content (S) of Fuel (% by weight)	0.500						
18	8								
19					Pollutant				
20		PM*	PM10*	direct PM2.5*	SO2	NOx			
21 Emissio	on Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	4.05E-03	2.40E-02			
22					(.00809S)	**see below			
23 Potentia	al Emission in tons/yr	0.28	0.16	0.16	1.62	9.60			
24 *PM10 e	emission factor in lb/hp-hr	was calculated using the emission factor in II	o/MMBtu and a brake specific fuel consumpt	ion of 7 000 Btu / hp-hr (AP-42 Table 3 3-1)					
25	•	-		1011 01 1,000 Btd / 11p 111 (/ tl = 12 Tuble 0.0 1).					
	emission factor: uncontrolle	ed = 0.024 lb/hp-hr, controlled by ignition tim	ing retard = 0.013 lb/hp-hr						
27									
	ous Air Pollutants (HAPs	3)							
29					Pollutant	1			
30		_							
31		Benzene	Toluene	Xylene	Formaldehyde	 			
	on Factor in lb/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07			
	al Emission in tons/yr	2.17E-03	7.87E-04	5.40E-04	2.21E-04	7.06E-05			
	= Polyaromatic Hydrocarbo	on (PAHs are considered HAPs, since they	are considered Polycyclic Organic Matter)						
35 ****Emis	ssion factors in lb/hp-hr we	re calculated using emission factors in lb/MN	//Btu and a brake specific fuel consumption of	of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).					
36									
37			Ī						
38 39 Green H	House Gas Emissions (G	HC)	L						
40		110)	Pollutant						
41			rollutarit						
42		CO2	CH4	N2O					
	on Factor in lb/hp-hr	1.15E+00	4.62E-05	9.24E-06					
	al Emission in tons/yr	4.60E+02	1.85E-02	3.70E-03					
45	ar Emiodion in tono, yr	1.002 - 02	1.002 02	5.762.00					
46			1						
47									
48			L						
	8 9 Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.								
	,	m 40 CFR 98 Subpart C Table C-2.	. T 0, WIN 0. T T.						
		from Table A-1 of 40 CFR Part 98 Subpart /	1						
	Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]								
	Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton] CO2e (tons/yr)= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).								
54 JOZE (I	T ODE Control The Control Co								

	Н	I
12		
13		
14		
15		
16		
17		
18		
19		
20	VOC	CO
21	7.05E-04	5.50E-03
22		
23	0.28	2.20
24		
25		
26		
27		
28		
29		
30		Total PAH
31	Acrolein	HAPs***
32	5.52E-08	1.48E-06
33	2.21E-05	5.94E-04
34		
35		
36		
37		
38	Potential Emission of Total HAPs (tons/yr)	4.41E-03
39		
40		
41		
42		
43		
44		
45	Summed Detential Emissions in torothe	4.60E+02
-	Summed Potential Emissions in tons/yr	
47	CO2e Total in tons/yr	4.62E+02
48		
49		
50		
51		
52		
53 54		
54		

					_	-	_	
	A	В	С	D	E Annouality As Emission Colonial	F	G	Н
2					Appendix A: Emission Calculations Reciprocating Internal Combustion Engines - Natural Gas			
3					2-Stroke Lean-Burn (2SLB) Engines			
4			c	Company Name:	MGPI of Indiana, LLC			
5			Č		7 Ridge Avenue, Lawrenceburg, Indiana 47025			
6			Significant Source Mo					
7			Significant Source M					
8			Olginicant i emit m		Kristen Willoughby			
9					12/22/2014			
10				24.0.				
11			Maximum Heat Input Capacity (MMBtu/hr)	0.121				
12			Maximum Hours Operated per Year (hr/yr)	500				
13			Potential Fuel Usage (MMBtu/yr)	60.5				
14			High Heat Value (MMBtu/MMscf)	1020				
15			Potential Fuel Usage (MMcf/yr)	0.06				
16					<u>-</u>			
17					Pollutant			
18 C	riteria Pollutants	PM*	PM10*	PM2.5*	SO2	NOx	VOC	co
19 E	mission Factor (lb/MMBtu)	3.84E-02	4.83E-02	4.83E-02	5.88E-04	3.17E+00	1.20E-01	3.86E-01
	otential Emissions (tons/yr)	0.001	0.001	0.001	1.78E-05	0.10	0.004	0.01
			M10 emission factor is filterable PM10 + conden	nsable PM.				
	PM2.5 emission factor is filteral	ble PM2.5 + c	ondensable PM.					
23								
24 H	azardous Air Pollutants (HAPs			1				
		Emission Factor						
25	Pollutant	(lb/MMBtu)	Potential Emissions (tons/yr)					
26	Acetaldehyde	7.76E-03	2.35E-04	1				
27	Acrolein	7.78E-03	2.35E-04	1				
28	Benzene	1.94E-03	5.87E-05	1				
29	1,3-Butadiene	8.20E-04	2.48E-05	1				
30	Ethylbenzene	1.08E-04	3.27E-06	1				
31	Formaldehyde	5.52E-02	1.67E-03]				
32	Methanol	2.48E-03	7.50E-05					
33	Methylene Chloride	1.47E-04	4.45E-06					
34	Hexane	4.45E-04	1.35E-05					
35	Toluene	9.63E-04	2.91E-05					
36	2,2,4-Trimethylpentane	8.46E-04	2.56E-05]				
37	Total PAH**	1.34E-04	4.05E-06					
38		Total	2.38E-03					
39								
-	PAH = Polyaromatic Hydrocarb	on (PAHs are	e considered HAPs, since they are considered F	Polycyclic Organi	c Matter)			
41								
-	lethodology							
\vdash	mission Factors are from AP-42	101 101 10						
		_	Heat Input Capacity (MMBtu/hr)] * [Maximum Ho					
	Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]							
46								
47				CO2	Greenhouse Gas (GHG)	l No.	-	
-					CH4	N20	-	
-	9 Emission Factor in Ib/MMBtu* 1.25							
-	0 Emission Factor in Ib/MMcf** 2.2							
-	1 Potential Emission in tons/yr 3.33 0.04 0.00							
52								
$\overline{}$	Summed Potential Emissions in tons/yr 3.37							
54								

	Α	В	C	D	E	F	G	H
55					•	-		
56	CO2e Total in tons/y				4.29			
57								
58								
59	Methodology							
60	*The CO2 and CH4 emission factors	are from Emis	ssion Factors are from AP-42 (Supplement F, July 2	2000), Table 3.2-2				
61	**The N2O emission factor is from AF	9 42, Table 1.4	4-2. The N2O Emission Factor for uncontrolled is 2	.2. The N2O Emission	on Factor for low NOx burner is 0.64.			
62	Global Warming Potentials (GWP) fro	m Table A-1 o	of 40 CFR Part 98 Subpart A.					
63	For CO2 and CH4: Emission (tons/yr) = [Potential I	Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MME	Btu)] / [2,000 lb/ton]				
64	For N2O: Emission (tons/yr) = [Poten	itial Fuel Usag	ge (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,00	00 lb/ton]				
	CO2e (tons/yr) = CO2 Potential Emiss	sion ton/yr x C	CO2 GWP (1) + CH4 Potential Emission ton/yr x CH	14 GWP (25) + N2O F	Potential Emission ton/yr x N2O GWP (298).			
65								
66								
67	Abbreviations							
68	PM = Particulate Matter		NOx = Nitrous Oxides				CO2 = Carbon Dioxide	
69	PM10 = Particulate Matter (<10 um) VOC - Volatile Organic Compounds CH4 = Methane							
70	SO2 = Sulfur Dioxide CO = Carbon Monoxide N2O = Nitrous Oxide							
71							CO2e = CO2 equivalent emissions	

	A B	С	D	F E	F			
1		-	-	Appendix A: Emission Calculations				
2				Reciprocating Internal Combustion Engines - Diesel Fuel				
3	Output Rating (<=600 HP)							
4				Maximum Input Rate (<=4.2 MMBtu/hr)				
5				MGPI of Indiana, LLC				
6			Address:	7 Ridge Avenue, Lawrenceburg, Indiana 47025				
7			Significant Source Modification No.:	0296-35496-00005				
8			Significant Permit Modification No.:	029-35505-00005				
9			Reviewer:	Kristen Willoughby				
10				12/22/2014				
11								
	missions calculated base	d on output rating (hp)						
13	imoorono varvalatoa baoo	a on output runing (np)						
		Output Horsepower Rating (hp)	235.0]				
15		Maximum Hours Operated per Year	500	1				
14 15 16		Potential Throughput (hp-hr/yr)	117,500					
17		Sulfur Content (S) of Fuel (% by weight)	0.500					
18								
19 20					Pollutant			
		PM*	PM10*	direct PM2.5*	SO2			
21 E	Emission Factor in lb/hp-hr	2.20E-03	2.20E-03	2.20E-03	2.05E-03			
22								
23 P 24 _{*r}	otential Emission in tons/yr	0.13	0.13	0.13	0.12			
27 28 H	*NOx emission factor: unco	ntrolled = 0.024 lb/hp-hr, controlled by ignition tim	ing retard = 0.013 lb/hp-hr					
29				T	Pollutant			
30 31		B	- .	V. I.	4 0 Dutadiana			
	Emission Factor in lb/hp-hr**	Benzene	Toluene	Xylene	1,3-Butadiene			
	<u> </u>		2.86E-06	2.00E-06	2.74E-07			
	Potential Emission in tons/yr	3.84E-04	1.68E-04	1.17E-04	1.61E-05			
		ocarbon (PAHs are considered HAPs, since they a						
35 36	***Emission factors in lb/hp-	hr were calculated using emission factors in lb/MN	IBtu and a brake specific fuel consumption of	f 7,000 Btu / hp-hr (AP-42 Table 3.3-1).				
37								
38								
	Green House Gas Emission	ns (<u>GHG)</u>			_			
40			Pollutant					
41]			
42		CO2	CH4	N2O	_			
43 E	mission Factor in lb/hp-hr	1.15E+00	4.62E-05	9.24E-06				
44 P	otential Emission in tons/yr	6.76E+01	2.71E-03	5.43E-04				
45								
46								
47								
48								
	Methodology							
.5 1141								

	Α	В	С	D	E	F		
50	Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2							
51	CH4 and N2	O Emission Factor fi	rom 40 CFR 98 Subpart C Table C-2.					
52	52 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.							
53	Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]							
54	Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]							
55	CO2e (tons/	yr) = CO2 Potential E	Emission ton/yr x CO2 GWP (1) + CH4 Potent	ial Emission ton/yr x CH4 GWP (25) + N2O F	otential Emission ton/yr x N2O GWP (298).			

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12 13				
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16				
17				
18				r
19				
20	NOx	Voc	СО	
21	3.10E-02	2.51E-03	6.68E-03	
22 23	1.82	0.15	0.39	
24	1.02	0.13	0.59	
25				
26				
27				
28				
29				T (DAIL
30 31	Formoldohudo	Acataldahuda	Aoroloin	Total PAH HAPs***
32	Formaldehyde 8.26E-06	Acetaldehyde 5.37E-06	Acrolein 6.48E-07	1.18E-06
33	4.85E-04	3.15E-04	3.80E-05	6.91E-05
34	4.00€ 04	0.10L 04	0.002 00	0.012 00
35				
36				
37				
38		Potential Emission of Total HAPs (tons/yr)	1.59E-03	ļ .
39				
40				
41				
42				
43 44				
44				
46		Summed Potential Emissions in tons/yr	6.76E+01	
47		CO2e Total in tons/yr		ii
48		COZE TOTAL III TOTIS/YI	0.7 0ET01	
49				
+3				

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54 55				
55				